A Strange Story. By Dr. ANDREW WILSON. See page 82.

Spring Cleaning. See page 87.

BOSTON MEDICAL LIBRARY IN THE FRANCIS A. COUNTWAY

HEALTH

A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

"Reason's whole pleasure—all the joys of sense—
Lie in three words, HEALTH, PEACE, and COMPETENCE."—*Pope.*

EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

VOL. XIII.—No. 318. FRIDAY, MAY 10, 1889. [PRICE TWOPENCE.

PROTECTION FROM FIRE.

Bryant & May's

Safety Matches

PATENT 16 PRIZE MEDALS.

Contain no Phosphorus. Are not Poisonous. Harmless to those employed in their manufacture.

PROTECTION TO HEALTH. SOLD EVERYWHERE.

SCHWEITZER'S

COCOATINA.

GUARANTEED PURE SOLUBLE COCOA.

This Old-Established Article retains its position as "the finest Cocoa in the Market." It is unequalled in purity and flavour, and is very Economical. It will bear the strictest Chemical test, and keeps for years in all Climates.

45, FARRINGDON-STREET, LONDON, E.C.

A SPECIFIC FOR GENERAL DEBILITY.

INMAN'S COMPOUND SYRUP OF THE HYPOPHOSPHITES.

A Tonic Syrup of wonderful Strengthening and Invigorating Properties.

INMAN'S SYRUP is composed of the Hypophosphites of Lime, Iron, Soda, and Potash, and valuable tonic alkaloids, combined so as to be readily assimilated by the human system. It is a safe and sure remedy for Nervous Prostration and General Debility, whether the result of overwork, mental anxiety, or excesses. There is no medicine that has a more beneficial action upon a debilitated constitution. It stimulates, strengthens, and invigorates the system, and effectually removes the distressing feelings of Nervous Exhaustion.

It is suited to both sexes and to all ages. For Delicate Females, and particularly those suffering from impoverished blood, it is invaluable.

SPECIAL CAUTION.—If you cannot get INMAN'S *Syrup of the Hypophosphites from your Chemist, do not be persuaded to take a worthless substitute, but send direct to the Proprietors. Enclose the Price, and they will send it, per Parcel Post, securely packed, without additional cost.*

Sold in Bottles at 2/6 and 4/6 each.
(One Large bottle equals Two Small.

London Depot: F. NEWBERY & SONS.

Sole Proprietors: WILLIAM INMAN & CO., Ltd., The London Drug Stores, 8, Shandwick Place, and 46, Leith Street, EDINBURGH.

ROWNTREE'S

Characterized by PURITY, EXTRAORDINARY STRENGTH and DELICACY of FLAVOUR.

"ELECT" COCOA.

Is very ECONOMICAL, as 1 lb. will make over 120 cups of most DELICIOUS COCOA.

Highly commended by the *Lancet, British Medical Journal, Medical Press, Medical Record, Hospital Gazette, Illustrated Medical News,* and other influential organs; also, by many of the Faculty, and Drs. HASSALL and CLAYTON, and other analysts.

YORK, ENGLAND.

SCAFE'S PATENT LEATHER & RUBBER COMBINATION BOOTS

FOR HEALTH, COMFORT AND DURABILITY

THESE BOOTS are the BEST that HAVE EVER been DEVISED.

See Opinions of the Press, which is unanimous in its approval of the invention.

Extract from *The Field*, Saturday, Feb. 11th, 1888:—"The Rubber Sole is actually impervious to damp under all conditions. We have had the boots subjected to severe tests. A journey of over a hundred miles on gravel roads made no appreciable impression on the soles, and after twelve hours in the wet grass the feet were as dry and comfortable as possible."

From *Invention*, October 27th, 1888:—"Some six months ago we described the Leather and Rubber Combination Boot. We have since had an opportunity of testing this Boot, and we can add our testimonial to those of many others respecting the excellent wearing qualities of the same. They are a perfect cure for cold feet, while being equally comfortable in summer. From a list of testimonials we find that these boots are winning golden opinions everywhere."

Edward Roe, M.R.C.S. Eng., 1874, L.R.C.P. Lond., 1874, writes:—"Lyndhurst, Hants, June 30th, 1888.—Dear Sirs,—I have much pleasure in stating that your Combination Boots gave me the greatest satisfaction. I gave them a good trial, as I had a lot of walking to do in the snow, and also during the wet weather they kept my feet perfectly dry and comfortable. I have recommended them to many of my friends, and they are all very pleased with them; I think they are the best boots I ever had."

"Town-street, Horsforth, December 18th, 1888.—Gentlemen,—After suffering from a most serious illness I was ordered by Dr. Jessop, of Leeds, to keep my feet dry and warm, and he recommended me to wear your Combination Boots, and after doing so I derived so much benefit from them that I shall wear no other kind. In fact, I would rather buy these boots than have any other kind given. —Yours respectfully, BENJAMIN MYERS."

AGENTS for the sale of these Boots are being appointed in all large towns.

If unable to procure, write for particulars and prices to the Manufacturers and Patentees,

THE LEATHER AND RUBBER BOOT COMPANY,
20, ALBION-ST. LEEDS

MARINE HOTEL,
NORTH BERWICK, N.B.

(Twenty-two Miles from Edinburgh.)

FAMOUS SUMMER RESORT. Splendid Golfing Green. Sea Bathing. Sea Fishing, Boating, &c. Charming Excursions to the Bass Rock, Tantallon, and numerous Castles and Seats, and the well-known Links are a most delightful Promenade.

One of the finest Hotels in Scotland. Private Grounds; unrivalled Views; extensive system of Baths—fresh and salt water. *Cuisine* is well known for its uniform excellence. Table d'Hôte at separate tables, from 6.30 to 8.30. Post and Telegraph Office in the Hotel.

A. L. VOGEL, Manager,
And Proprietor of the New Hotel Splendide and Albemarle, Piccadilly, London.

ROWLAND'S
ODONTO

Known for sixty years to be the best and purest Tooth Powder, as it contains no acid or gritty substances, which ruin the Teeth and produce premature decay; it

WHITENS the TEETH

prevents and arrests decay, strengthens the gums, and gives a pleasing fragrance to the breath. The genuine ODONTO is ROWLAND'S of

20, HATTON-GARDEN, LONDON.

TRELOAR'S
CHEVIOT CARPETS

Are made and kept in Stock in the following Sizes, in all Colourings,

ALL WOOL, FRINGED, AND BORDERED:—

SIZE.	PRICE.
9 ft. 0 in. by 7 ft. 0 in.	£1 1 0
9 ft. 3 in. ,, 8 ft. 3 in.	1 5 6
10 ft. 3 in. ,, 8 ft. 3 in.	1 8 0
10 ft. 9 in. ,, 9 ft. 9 in.	1 16 0
11 ft. 3 in. ,, 8 ft. 3 in.	1 14 6
11 ft. 9 in. ,, 9 ft. 9 in.	1 18 0
12 ft. 9 in. ,, 9 ft. 9 in.	2 2 0
12 ft. 9 in. ,, 11 ft. 3 in.	2 8 0
13 ft. 3 in. ,, 11 ft. 3 in.	2 10 0
14 ft. 3 in. ,, 11 ft. 3 in.	2 14 0

And in other sizes. ALL WOOL.

AVOID IMITATIONS MADE WITH A MIXTURE OF COTTON.

The QUEEN says:—"The writer of this note had a year's experience of Cheviot Carpets, and finding them wear and look well, has every reason to be satisfied."

CHEVIOT CARPETS
CAN BE OBTAINED ONLY FROM
TRELOAR & SONS,
68, 69 & 70, LUDGATE-HILL, LONDON.

A Catalogue of all the best Floor-Coverings post free.
ESTABLISHED 1832.—ELEVEN PRIZE MEDALS.

GOUT,
RHEUMATISM, SCIATICA, & GOUTY ECZEMA,
DRINK
PITKEATHLY cum LITHIA,
The only Rational Treatment in Use.

The combination of Pitkeathly with Lithia prevents an undue formation of Urates in the system, maintains the digestive and assimilative organs in a condition of healthy activity, and promotes the elimination of Urates by the kidneys, especially if, at any time, there appears to be a tendency to their accumulation in the body.

Sold by Chemists, Mineral Water Dealers, and Wine Merchants.
Sole Proprietors: REID & DONALD, PERTH.
LONDON AGENTS:
BEST & SONS, 22, HENRIETTA-STREET, CAVENDISH-SQUARE, W.

REMINGTON
STANDARD TYPEWRITER.

STILL AHEAD! SPEED CONTESTS.

CINCINNATI, July 25—Highest Speed on Legal Testimony.
NEW YORK, August 1—**First, Second, Third, and Fourth Prizes** on Business Correspondence.
TORONTO, August 13 (Tournament for CHAMPIONSHIP of the WORLD).
GOLD AND SILVER MEDALS for Highest Speed ever recorded on Business Correspondence and Legal Testimony—99 Words per Minute, excluding errors.

SOLE PROPRIETORS AND MANUFACTURERS—
WYCKOFF, SEAMANS, & BENEDICT,
100, GRACECHURCH-STREET, E.C.

◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MAY* 10, 1889.

CONTENTS OF No. 318.

	PAGE
Notes by the Way: By the Editor.	81
Original Essays:—	
A Strange Story. By Dr. Andrew Wilson	82
The Law of Health as to Infectious Diseases. By J. Ridley Shield. Second Paper	84
Personal Health:—	
The Treatment of Dyspepsia	86
A Chat about Soaps	87
The Family Circle:—	
"Spring Cleaning"	87
The Importance of Water	88
Popular Science Papers:—	
The Shady Side of Brain Work—The Psychology of Spiritualism. By Joseph Jastrow. Fourth Paper	89
The Use and Abuse of Milk	90
Jottings from the Journals:—	
Dirt and Disease — American Infertility—Overcrowding and Open Spaces—The Arrest of Consumption	91-92
Our Bookshelf:—	
Social Welfare—The Statistics of Life	93
IMPORTANT ANNOUNCEMENT	94
Our Letter Box:—	
Rules for Correspondents	94
Queries and Answers:—Replies: General, Sanitary, and Medical	95

Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

SPEAKING of Dr. Barry's elaborate and most exhaustive vindication of vaccination during the Sheffield epidemic, a writer says that every fatal case of small-pox, every case, fatal or non-fatal, that was alleged to have occurred in vaccinated children under ten years of age; and every case alleged to have occurred after previous small-pox or after revaccination at Sheffield, was personally investigated in detail by Dr. Barry. Stated generally, his results show that, as regards the 70,000 children under ten years, living in Sheffield, the attack-rate of the vaccinated was 5 per 1,000, and that of the unvaccinated was 101. The death-rate of the vaccinated children under ten was 0·09, and of the unvaccinated 44. Or, in other words, in 100,000 vaccinated children the mortality was 9, and for the same number of unvaccinated children, the mortality was 4,400. Therefore the vaccinated had a 20-fold immunity from attack by small-pox, and a 480-fold protection against death by small-pox. Of the children living in the houses actually invaded by small-pox, the attack-rate was 78 per 1,000 in the vaccinated, and 869 per 1,000 in the unvaccinated.

THE death-rate of the vaccinated was 1, and of the unvaccinated 381, per 1,000. Therefore the protection enjoyed by the vaccinated over the unvaccinated was 11-fold against attack, and 381-fold against death. There was a similar experience with reference to persons over ten; for every 100,000 of those twice vaccinated, there were 8 deaths; of those once vaccinated, 100 deaths; and of the unvaccinated, 5,100 deaths. Then, as to the persons employed in the various hospitals: of 161 persons 18 had had small-pox, none of whom fell ill; 62 were vaccinated only in infancy, 6 of them were attacked, and 1 died. The remaining 81 had been revaccinated, and not one contracted small-pox.

✣ ✣ ✣

THEN, as to the troops: there were 830 of all ranks, of whom 12 were attacked and 1 died. The medical officer in charge of the troops informed Dr. Barry that revaccination had been attempted with the 12 men attacked, but that in every case it had been unsuccessfully performed. Then, of the police: 10 of them took small-pox, when a revaccination was ordered, and no further cases occurred. Again, of 290 men employed at the Post Office, all were revaccinated, and during the whole course of the epidemic not one took the disease. The net result in Sheffield was that if the vaccinated children had been attacked at the same rate as the unvaccinated, there would have been 7,000 attacks in place of 353, and 3,000 deaths in place of 6; or up to the conclusion of the epidemic there would have been 4,400 deaths in place of 9. These are very simple, but conclusive, facts, and it will require a great amount of ingenuity to controvert them. The experience of Sheffield is, however, only a repetition of that of London in 1881, of Montreal in 1885, of Leipzig in 1871, and of every other scene of an epidemic of small-pox in recent years.

✣ ✣ ✣

REFERRING to the morphine habit, a physician says that children born of women addicted to the morphine habit are practically morphine-eaters from birth. During the first few days of life, unless morphine is given to them, they are very apt to suffer collapse: and this condition may end in death, the child being too weak to withstand the violent symptoms, which are similar to those which follow the sudden withdrawal of the drug in adult opium-eaters.

✣ ✣ ✣

MR. H. COURTHOPE BOWEN, whose opinions on all matters connected with the proper construction of schoolrooms are entitled to great weight, expresses somewhat as follows what, in his judgment, should be

COMPAGNIE FERMIÈRE DE L'ÉTABLISSEMENT THERMAL DE

(STATE VICHY SPRINGS)

CELESTINS.—For Diseases of the Kidneys, Gravel, Gout, Rheumatism, Diabetes, &c.
GRANDE-GRILLE.—For Diseases of the Liver and Biliary Organs, &c.
HÔPITAL.—For Stomach Complaints.
HAUTERIVE.—Strongly impregnated with natural Carbonic Acid. An excellent TABLE WATER.
ALL THE ABOVE MIX WELL WITH WINES OR SPIRITS.
ANNUAL SALES ARE MORE THAN SIX MILLION BOTTLES.

SOLE ENGLISH BRANCH:—

INGRAM & ROYLE,

LONDON: 52, FARRINGDON-STREET, E.C. LIVERPOOL: FINNEY-LANE. BRISTOL: BATH-BRIDGE.
AND OF ALL CHEMISTS. FULL DESCRIPTIVE PAMPHLET ON APPLICATION.

considered a good schoolroom. Taking the case of a room 14 feet high, fairly ventilated and always well aired in recess, he would assign two-thirds of the floor-space to the scholars and their desks, and keep the other third for the teacher, the blackboard, &c. With single desks, 22 inches should be allowed from side to side, and 3 feet from back to front, for each scholar. The passages need not be more than 18 inches for those running from back to front, and 1 foot for those running from side to side. In such arrangement, counting the passages, each scholar has (without reckoning the share of the space allotted to the teacher) a trifle more than 40 inches from side to side, and just 4 feet from back to front. In a room 25 feet by 20 feet, the floor-space for scholars' desks will be 16 feet by 20 feet, with 4 feet from back to front per row, and accommodation is provided for twenty scholars. The whole floor-space is 500 square feet, and the cubic contents of the room 7,000 cubic feet, with 20 square feet and 280 cubic feet per person.

✣ ✣ ✣

Fumigation by the burning of sulphur is the most common method employed by Boards of Health in the disinfection of apartments in which contagious disease has existed, and the clothing worn by the patients during their illness. In an address delivered by the distinguished chemist, Dr. E. R. Squibb, before the King's County Medical Association, he called attention to the fact that there must always be an abundance of watery vapour in the room to be disinfected: otherwise the sulphurous acid gas generated by the burning of the sulphur is not an efficient disinfectant. The same is true of chlorine gas when used for disinfecting purposes.

✣ ✣ ✣

Dr. Jakov M. Shmulevitch has drawn attention to dried potato as an important food article, possessing some very valuable advantages in comparison with the vegetable in fresh state. The advantages claimed for the article are these: (1) While fresh potatoes easily rot. blacken, and sprout, dried potatoes, when kept duly protected from moisture, remain in the best condition for a very long time; and (2), being by far lighter and less bulky than fresh potatoes, are by far more convenient for preservation and transportation, which point has a great practical importance, especially in time of war. To be fit for culinary use, the article requires a preliminary maceration in water for about ten or twelve hours.

✣ ✣ ✣

Speaking roughly, says Professor Atwater, a quart of oysters contains, on the average, about the same quantity of active nutritive substance as a quart of milk, or a pound of very lean beef, or a pound and a half of fresh codfish, or two-thirds of a pound of bread. But while the weight of actual nutriment in the different quantities of food material named is very nearly the same, the quality is widely different. That of the very lean meat or codfish consists mostly of what are called, in chemical language, potein compounds, or "flesh formers"—the substances which make blood, muscle, tendon, bone, brain, and other nitrogenous tissues. That of the bread contains but little of these, and consists chiefly of starch, with a little fat and other compounds, which serve the body as fuel, and supply it with heat and muscular power. The nutritive substance of oysters contains considerable of both the flesh-forming and the more especially heat and force-giving ingredients. Oysters come nearer to milk than almost any other common food; their values for supplying the body with material to build up its parts, repair its wastes, and furnish it with heat and energy would be pretty nearly the same.

Original Essays

"Life is not to live, but to be well."—*Martial.*

A STRANGE STORY.

By Dr. Andrew Wilson.

Of late years a very remarkable idea—founded, it may be noted, on exact observation—has sprung up among physiologists with reference to the duties discharged within the animal body by certain microscopic particles which exist in the blood. In order to understand clearly what is implied in this discovery it is necessary, first of all, to glance at the nature of the blood itself.

When we examine blood under the microscope, a very small drop is taken, pressed between two plates of glass, and the resulting thin film submitted to our scrutiny. An idea of the appearance of blood under the microscopic

Fig. 1.—A thin film of blood highly magnified.

object-glass may be gathered from an inspection of the accompanying illustration (Fig. 1), and the following points are to be duly noted regarding it. First, the *serum*, or fluid part of the blood (represented by the white space within the circle), is seen to be absolutely colourless. In the second place, we see that blood derives its colour, not from its fluid part, but from the solid particles (or *corpuscles*) which float in it. The *serum*, or blood-fluid, indeed, is as colourless as water. The corpuscles of the blood number two kinds, red and white. The red are by far the more numerous. They are so closely packed together in blood that our unassisted sight cannot detect the clear fluid in which they are contained; whereas in the thin film of blood the microscope enables us to see this fluid, as it were, between the spread-out particles. In our illustration we see these red corpuscles well nigh filling up the field of vision, and running, as is their wont when drawn from the body, into *rouleaux*, like coins.

The white corpuscles are much less numerous than the red. A fair average of their number might be stated at one white to 300 or 400 red ones. At *aa* in figure 1 two of these white corpuscles are represented. They are slightly larger than the red ones; the latter average in diameter the one three-thousandth ($\frac{1}{3000}$) of an inch, while the white average the one twenty-five-hundredth of an inch across. The functions or uses of the red corpuscles have long been determined. Coloured red by means of *hæmoglobin*, a substance which possesses a great aptitude for the absorption of gases, these corpuscles carry the oxygen which is breathed into the lungs to all parts of the body, while they receive from the tissues the carbonic acid gas (representing part of the body's wear

and tear), and bring this effete gas to the lungs, there to be exhaled.

About the uses of the white corpuscles we have hitherto not been quite so clear as a matter of science. We know that they are to be found even in the digested food, or chyle, and we also know that the spleen has much to do with their formation. Again, it was ascertained that in some cases at least, the central part of a white corpuscle might, through becoming coloured, give origin to a red one. Apart from these considerations, however, it must be confessed our knowledge of the functions of the white corpuscles of the blood has hitherto been anything but full or complete. Possibly the year 1846 may now be accounted the date when our information regarding the nature of these curious bodies received its first marked accession of details.

In that year a very singular fact about the white corpuscles of the blood was placed on record by Dr. Augustus Waller. That observer noticed that these

Fig. 2.—A minute blood-vessel, or capillary (magnified), showing migration of white corpuscles.

corpuscles could fix themselves on the side of the thin-walled and minute blood-vessels (Fig. 2, *c*) (or *capillaries*), could then insinuate themselves through the walls of the vessels (*a a*), and finally appear to find their way outside the vessels altogether (*b b*). In this way the white corpuscles appeared to possess a power of migrating from the blood into the tissues and organs of the body. Various explanations of this remarkable occurrence were framed, and it must be noted that the presence of these wandering cells among the tissues has been a fact long familiar to physiologists. The manner in which this passage through the solid wall of the vessel is accomplished may be readily understood. In the first place, the capillary wall is not that of a dense, rigid tube. It is, contrariwise, "a tube of living protoplasm," which very easily gives way before the movements of another piece of living protoplasm (the white corpuscle), which is insinuating itself through the wall's soft substance. The wall of the vessel simply gives way to allow of the passage through it of the corpuscle, and afterwards immediately closes and assumes its normal and closed condition.

So far there is no difficulty in understanding how the mere act of migration itself is carried out. But to fully appreciate the whole matter, it is necessary to investigate further the nature of the white corpuscle itself. In all animals this is a speck of living matter (or *protoplasm*) endowed with a vitality or life independent of that of the animal in whose blood or tissues the corpuscle is found. We can see a white corpuscle, on a specially prepared microscope stage, to change from shape to shape in active movement; its soft body flowing from one form to another like that of the animalcule well known as the *Amœba*. Furthermore, the corpuscles can be seen to eat and to digest solid particles as if they were independent beings taking in food. This is, in itself, a startling thought—namely, that we possess in our blood millions of white corpuscles, each of which has an entity largely independent of us, and each of which is a living particle, capable, in its own fashion, of wandering throughout our tissues, and of eating and digesting on its own account the matters it finds there. It will be interesting to discover if science has succeeded in tracing out the meaning and utility of these strange properties and actions on the part of the white corpuscles of the blood. I may here remark that the general name of *leucocytes* has been given to these white corpuscles; whilst, in allusion to their eating and digesting powers, they have also been named *phagocytes*.

It has long been known that in all conditions of body which may be included in the general term "inflammation," a migration of the leucocytes is seen to take place. In an inflamed spot or tissue these white cells can be seen to be crowded together. Furthermore, when inflammation runs its natural course, and merges into suppuration—that is the formation of matter or *pus*—we find in pus these white cells in large numbers. That this observation is important as bearing on the work of these leucocytes we shall hereafter note. Again, in some diseases, such as leprosy and tuberculosis, we may detect in the diseased and attached parts a large cell, which has been called a *giant cell*; and within this big cell the germs or bacilli of the disease are to be seen. This curious fact, we shall likewise see, has its own bearing upon the true history of the white corpuscles or leucocytes, as also has another fact—namely, that if a fine thread or a needle be passed through a vein, the white corpuscles will crowd in great numbers round the intruding body, as if endeavouring to get rid of it and to repel the invading object.

Turning now to the groundwork of the subject, we find some most curious investigations carried on by Metschnikoff and others into a disease of a well-known water-flea, the *Daphnia*, to offer a convenient starting-point. The Daphnia is a small crustacean, common in ponds and ditches. It was observed that on sundry occasions the germs or spores of fungi gained an entrance to the bodies of these creatures, and, after germinating, dispersed themselves throughout its frame. The body of the water-flea being transparent, its internal anatomy and conformation can be very readily observed under the microscope. These spores were deposited in large numbers in the head and hinder portions of the water-flea's body, and induced thereby a diseased condition. The white cells or leucocytes of the water-flea's blood were then noted to carry out a most interesting operation. Assembling in numbers wherever the intruding spores were to be found, they literally attacked and devoured these particles. Here we see why, in inflammations, there should be a collection of the white cells. They are our microscopic scavengers, ordered for special duty to endeavour to abolish and absorb the matters or germs which are causing disease. In the case of the water-flea, the fate of the animal is described as simply depending on the battle betwixt the leucocytes and the spores. As Mr. Sutton puts it, "If the leucocytes finally overpower the spores, the Daphnia lives; if not, the Conidia (or collections of spores) overrun the crustacean, and death is the result."

Nor is this the whole story. For in Daphnia it was noted when one leucocyte was not powerful enough to

destroy a mass of spores other leucocytes united with it and formed a "giant cell," such as we have observed in leprosy. This, then, is the real meaning of "giant cells." They represent the united battalions of white corpuscles, illustrating the axiom that "union is strength," and endeavouring by their united efforts to dispose of the enemy which is too powerful for them in a single-handed condition.

From the water-flea to the frog is an easy step in the present case. The tadpole or young frog inhabits water, breathes by gills, and swims by aid of a fish-like tail. When the legs bud forth and lungs begin to be developed, the tail disappears, and the gills also vanish away, thus evolving the form of the adult frog. Now it can easily be proved that the disappearance of the frog's tail and gills is due to the work of the white cells, which here deserve their second name of *phagocytes* or "eating-cells." For they can actually be seen within the tissues of the young frog, engaged in the work of eating away the useless tail and gills. The remnants of the tadpole's tissues can be seen within these wonderful cells; while if we artificially irritate and inflame the tail-fin of tadpole or newt, we can see the white cells assemble round the irritated point, and eat up particles of carmine or other pigment which have been injected into the animal's blood.

That these revelations of a work which goes on perpetually within animal bodies must be regarded as of extraordinary nature, goes without saying. Not only must we regard these white cells as normally, and in health, engaged in removing deleterious matters from our tissues, but in disease we see how their actions become intensified as defenders of the body from invaders in the shape of germs and other irritating particles. Mr. Sutton well describes inflammation as "a struggle between irritant bodies and white blood corpuscles."

Perhaps, when we remember that all the cells of our tissues are essentially living particles, our wonder may be somewhat modified; but this fact does not detract from the curious nature of the study that shows us how a set of wandering cells have been organized within animal bodies as a kind of flying column of the living army. If disease attacks us, as in the case of the Daphnia, we may hold that it is beaten off when the white corpuscles have eaten up the germs of the disorder; while, when in turn when they are vanquished, the disease temporarily or permanently gains the victory.

The story of inflammation, says Mr. Sutton, may be "likened to a battle. The leucocytes are the defending army; their roads and lines of communications, the bloodvessels. Every composite organism maintains a certain proportion of leucocytes as representing its standing army. When the body is invaded by bacilli, bacteria, micrococci, chemical, or other irritants, information of the aggression is telegraphed by means of the vaso-motor nerves (or those regulating the blood-vessels), and leucocytes rush to the attack; reinforcements and recruits are quickly formed to increase the standing army, sometimes twenty, thirty, or forty times the original standard. In the conflict cells die, and often are eaten by their companions; frequently the slaughter is so great that the tissue becomes burdened by the dead bodies of the soldiers in the form of pus, the activity of the cell being testified by the fact that its protoplasm often contains bacilli, &c., in various stages of destruction. These dead cells, like the corpses of soldiers who fall in battle, later become hurtful to the organism they in their lifetime were anxious to protect from harm, for they are fertile sources of septicæmia and pyæmia (blood-poisoning)—the pestilence and scourge so much dreaded by operative surgeons."

Such is the strange story of our tissues, and such is a microscopic view of one of the battle-fields of life.

THE LAW OF HEALTH AS TO INFECTIOUS DISEASES.

By J. Ridley Shield.

SECOND PAPER.

There is no greater anomaly in our law than the way in which infectious diseases are treated when they happen to attack animals and when they run riot amongst human beings. We place animals in the first rank advisedly, because the pains and penalties attaching to neglect of infection where animals are concerned are so stringent, whereas infection may be carried in the most flagrant manner amongst men and women without any liability falling on the person who, consciously or unconsciously, allows himself to be the connecting link between a diseased and a healthy individual.

Let us illustrate this fact.

There is no general law by which a medical man is compelled to give notice of cases of infectious diseases, nor is there any compulsion on the part of a person in whose house such disease occurs to register the same; on the contrary, in nine cases out of ten, when fever, infectious in its nature, breaks out in a well-to-do house, every effort is made by the doctor and inmates to keep the knowledge of such outbreak from the public. It is true that the doctor may hedge himself round with every possible precaution known to modern science, and he may inculcate to the best of his power his patients, and those who surround them, with his own ideas; but with all this thrown in there are dozens of people who come more or less within the risk of either taking the disease themselves or carrying it to others if they are not personally susceptible. Such will always be the case, until there is some compulsory system of registration for infectious disease. It is true that in some places they are already seeking to do locally what should be universal, and we can only hope that from a small beginning there may be a wise and practical ending; but at the present time there is more thought for the brutes that perish than for human life and suffering.

Under the Contagious Diseases Animals Act, 41 and 42 Vic. C. 74, notice of any cattle or animals suffering from cattle plague, pleuro-pneumonia, foot and mouth disease, glanders, and other diseases, must be given to the police by the person having such cattle or animals in his possession, under a penalty of £20, or one which varies with the number of animals. In addition to this, numberless precautions are taken by the county authorities; areas are declared infected, and it becomes a matter of extreme difficulty to move animals into or out of such areas, and a whole regiment of clerks is kept at work on the various forms and orders necessary for the due administration of this Act and the orders in Council which supplement it. We are not complaining of this—far from it. It is but as it should be; only it does seem curious that all these efforts should be made to stamp out a contagious or infectious disease common to beasts, whereas a disease most fatal in its effect upon our fellow-creatures may be carried from door to door without any liability. Registration is sorely wanted, and, until registration is made compulsory, under heavy penalties, there will be continual risk of a simple case of scarlet fever or other kindred malady resulting in an epidemic.

As the law now stands, there are various measures affecting this question which should be noted. There are the Diseases Prevention Act, 1855, the Diseases Prevention Metropolis Act, 1883, and the Epidemic and Other Diseases Prevention Act, 1883. These Acts deal with formidable epidemic, endemic, or contagious diseases which are affecting, or threaten to affect, any part of England, and may be passed over as treating with exceptional events.

We were scarcely accurate in saying that notice of the existence of infectious disease need not be given under any circumstances, because, under the Public Health Acts for England and Scotland, the keeper of a common lodging-house shall, when a person in such house is ill from fever or any infectious disease, give immediate notice thereof to the medical officer of health of the local authority, and also to the Poor Law relieving officer of the union or parish in which the common lodging-house is situate. So far as England is concerned, any common lodging-house keeper who fails to give the notice required by the Act as to fever or infectious disease shall be liable to a penalty not exceeding £5, and for a continuing offence to a further penalty not exceeding 40s. for every day during which the offence continues. This, again, is only as it should be, and the sooner this system, with the penalties attaching to neglect of the provisions as to notice, is made universal, the better for the community.

It will be the one means of stamping out, or at all events keeping under, diseases which now run riot from the mere want of prudence and attention. This common lodging-house provision is the only attempt on the part of the Legislature to effect the registration of infectious disease; but there are numerous things to be done when such a disease is discovered, with a view of repressing it or making its progress less likely.

We will consider, then, what steps can be taken to prevent infection. Under the Public Health Act, 1875, Section 120, where any local authority are of opinion, on the certificate of their medical officer of health, or of any other legally qualified medical practitioner, that the cleansing and disinfecting of any house, or part thereof, and of any articles therein likely to retain infection, would tend to prevent or check infectious disease, such authority shall give notice in writing to the owner or occupier of such house, or part thereof, requiring him to cleanse and disinfect such house, or part thereof, and articles within a time specified in such notice. If such notice be not obeyed, the person to whom it is sent shall be liable to a penalty of not less than 1s. and not more than 10s. for every day during which he continues to make default, and the local authority shall cleanse and disinfect such house, or part thereof, or articles, and recover the expenses incurred from the owner or occupier in default in a summary manner. If an owner or occupier is unable from poverty to comply with this notice, the local authority may, with his consent, do what is necessary and defray the expenses.

121. Any local authority may direct the destruction of any bedding, or other articles, which have been exposed to infection from any dangerous infectious disease, and may give compensation for the same.

122. Any local authority may provide a proper place with everything necessary for the disinfection of all articles which have become infected, and shall disinfect such articles free of charge.

123. Any local authority may provide a carriage for the conveyance of persons suffering from infectious disease, and pay the expenses of removal of such person.

124. Where there is a hospital within a local authority's district, any person who is suffering from a dangerous infectious disorder, and has no proper lodging, may, on a duly signed certificate, be removed to such hospital at the cost of the local authority.

126. (1) Any person who, while suffering from an infectious disorder, wilfully exposes himself, without due precaution against spreading such disorder, in any street, public place, shop, inn, or public conveyance, or enters any public conveyance without notifying that he is so suffering;

(2) Being in charge of any person so suffering, exposes such sufferer; or,

(3) Gives, lends, exposes, or sells, without disinfecting, any bedding, clothes, &c., which have been exposed to infection, shall be liable to a penalty not exceeding £5.

127. Every owner or driver of a public conveyance shall make provision for disinfecting the same after it has, to his knowledge, conveyed any person suffering from an infectious disorder, under a penalty of £5; but no such owner or driver shall be compelled to convey any person so suffering until he has been paid sufficient to cover any loss or expense incurred by him in complying with this section.

128. Any person who knowingly lets for hire any house, room, &c., in which any person has been suffering from any dangerous infectious disorder without having the same and all articles therein liable to retain infection disinfected as therein mentioned shall be liable to a penalty not exceeding £20. This applies to an innkeeper.

129. Any person letting for hire or showing for that purpose any house, or part thereof, who makes a false answer to the question as to whether or not within six weeks previously any person suffering from a dangerous infectious disease has occupied such house, or any part thereof, shall be liable to a penalty not exceeding £20, or to imprisonment as therein set out.

These sections of the Public Health Act which we have considered at some length apply, in the main, to districts outside the Metropolis; but the provisions are almost identical with those of the Sanitary Act, 1866, which apply in particular to the Metropolis itself.

It will be seen that, although ample attention has been paid to cases which almost force themselves on the attention of the local authorities, there is no attempt at compelling the persons in whose house disease breaks out to give notice of such fact. The careful regulations as to disinfecting only come in after the disease may have been carried to a whole village. Again, the class affected by these provisions is, in the main, poor; and it is the poor and ignorant who are more active agents in spreading disease than any others. Speaking so far as local authorities in the country are concerned (generally the guardians of the union), the first intimation that is generally received as to an outbreak of infectious disease arises from an application either for relief or for assistance in finding a nurse. The poor are very reckless as to infection. Often from kindness of heart, possibly more often from want of knowledge, a poor woman will attend a neighbour suffering from some infectious complaint without thought of herself or her family. It is within our own experience that a mother of six children volunteered to nurse, and did nurse, a whole family down with scarlet fever, going backwards and forwards to her own house.

There could scarcely be a more opportune moment for the consideration of this subject. There is at present a most malignant epidemic of measles raging in London

and in several other large towns, and the Easter holidays will, it is to be feared, extend the evil. Children home from school with the disease in their system will have mixed with friends at various houses, and so the epidemic will be fostered and cultivated to a terrible extent. It would be a bold statement to say that compulsory registration would stamp out this plague, but it would undoubtedly help to mitigate the evil. It is difficult no doubt to say when a child has merely a cold or the first symptoms of measles; but this should only call for extra precaution.

We have already said that attempts are being made locally to enforce the notification of infectious disease, and it is to be hoped that the public will uphold by all possible means those who are endeavouring to promote so sensible a scheme.

It is for the welfare of the community that things should not go on as they now are, and every thinking person must feel that if notice of infectious disorders be necessary when animals are in danger, it is at all events quite as necessary that the same precaution should be adopted when the health of human beings is at stake.

Summary of Canal-Boats' Report for 1888.—A report on the working of the Canal-Boats Acts in the Port during the year 1888 has recently been presented to the Corporation by Dr. Collingridge. 698 canal-boats were inspected during the year, and these carried only 1,837 persons, although registered for a population of 2,570. Overcrowding is therefore rare, but does, however, sometimes occur. With regard to those instances in which it has been met with Dr. Collingridge says, "These are mostly cases of a poor man with a large family, always very difficult to deal with; where a man has only just sufficient money to support a young family, it stands to reason that he cannot afford to pay for the keep of one or two on shore, even if the children are old enough to be left. Clearly the children should be under the care of the mother, and it seems a cruel thing to deprive her of them, even where the extra expense can be borne. At the same time, it is, naturally, almost impossible to obtain a conviction for the offence of carrying one, or even two, extra where the family are all young. I have often shrunk from the responsibility of ordering a father to leave a young girl, the eldest of a family, with friends or neighbours on shore, or the alternative of requiring the infant to be removed from the boat. In spite of what has been done to render canal-boat life more civilized, and more in accordance with the requirements of modern ideas of humanity and common decency, there can be no question that it is not an existence which is in any way desirable for either women or children, and the sooner this is clearly realized the better for the physique and morals of the rising generation. Nearly every woman on a canal-boat will tell the same story: 'It is not fit for us or our children, but what *are* we to do?' The failure of the Education Acts to reach these children is quite a sufficient argument for this view." No case of infectious disease has come under notice during the past twelve months. Five summonses have been taken out, four being for indecent occupation and one for overcrowding. The fines, with costs, range between 5s. 6d. and 16s. 6d., a sufficiently heavy punishment for a poor man.

CHEMICAL ANALYSIS.—Dr. Drinkwater, Lecturer on Chemistry in the Edinburgh Medical School, undertakes the Analysis of Water, Foods, Wall-Papers, and of all other products and articles connected with Household Health and Commercial Interests. Terms on application to Dr. Drinkwater, Chemical Laboratory, 41, Chambers-street, Edinburgh.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

THE TREATMENT OF DYSPEPSIA.

The other day a dyspeptic physician went into a chemist's shop and ordered some carbonate of soda. The chemist did not know who he was. Said the chemist, "This will relieve you, but will not cure." "Quite right," said the physician. "I take it for dyspepsia, produced by not having sufficient exercise." The chemist replied, "If you were to put yourself under treatment, you would be cured in a month." Doubtless this was a hook thrown out to catch trade. To assert that drugs will compensate for unhealthy modes of living is as absurd as incantations and witchcraft. Doubtless most cases of dyspepsia could be cured if the individual lived properly. Town life is an unnatural life. The modes of living are unnatural. The hours of confinement, close work, and sunless rooms are unnatural too. If mankind would enjoy good health, there must be a free supply of pure, fresh air, plenty of out-of-door exercise, good food and freedom from carking care. It is not work which kills men so much as worry. Worry steals the sleep away, but work brings perfect rest, as the great poet says, "seals up the boy's eyes and steeps his senses in forgetfulness." Work quickly causes food to be taken up from the stomach and passed on by the blood to the tissues to nourish them at once. It hastens the removal from the system of the products of wasting and decay; it hurries from the body the ashes of life. With work the lungs and the skin and the kidneys are kept clear, but not so with overwork. Overwork means a jaded, fallen man, with the prospect of a bankrupt system.

A man consulted the great Abercromby for dyspepsia and depression of spirits. "Go over to see that clever clown Grimaldi; you will have a hearty laugh. It will liven you up, and you will be all right after the rest and change." "Alas!" retorted the patient, "I am Grimaldi." So we find that change is an indispensable requisite of healthy, daily life.

"Give me alms," said a beggar in the street to a passer-by. "What for?" "I am hungry," said the beggar. "Lord! I envy you," answered the other, and passed on. So we find the sufferings, loss of appetite, and dyspepsia in real life are produced by over-feeding on the one hand, and improper and insufficient alimentation on the other. The advice of Abercromby to the dyspeptic duchess is difficult to beat—"Live on sixpence a day and earn it." It is not the denisons of towns nor the affluent who enjoy the best health (for what is dyspepsia but an indication of broken health?) so much as those who seem to realize an answer to the prayer, "Give me neither poverty nor riches, but feed me with food convenient for me."

Science, with her mystic fingers, ever reaching out in all directions, has discovered a means whereby the potent digestive powers of other animals can be turned to the use of man. Pepsin, a digestive ferment, obtained from the calf, sheep, or pig, &c., is now manufactured in such a state of purity, that two or three grains of it are sufficient to digest a whole meal. So when the stomach, from one cause or another, is incapacitated for its normal work, we call to our aid the digestive power of our old friend the pig. Pepsin Tabloids contain each a grain of this potent principle; they are agreeable to take, reliable in action, and satisfactory in every way.

Just Published, Crown 8vo, 1s. 6d., post free.

ANTISEPTICS: A HANDBOOK FOR NURSES.

Being an Epitome of Antiseptic Treatment, with Notes on Antiseptic Substances, Disinfection, Monthly Nursing, &c.

By Mrs. ANNIE HEWER,

Late Hospital Sister, Diplomée Obst. Soc., Lond.

"A clear, concise, and excellent little handbook."—*The Hospital.*

"The book ought to find readers not only among hospital nurses, but in every family."—*Glasgow Herald.*

"It should be in the hands of every nurse."—*Health.*

"Nurses will find this treatise clear, concise, simple, and well up to date."—*Hospital Gazette.*

"To those nurses who take an interest in their work we most heartily recommend this little book."—*Nursing Notes.*

LONDON: CROSBY LOCKWOOD & SON,
7, Stationers' Hall-court, E.C.

TEETH.

A COMPLETE SET, ONE GUINEA.

Single Tooth, 2s. 6d.

FIVE YEARS' WARRANTY.

Dr. ANDREW WILSON, late R.N., says:—"I can recommend Mr. Goodman as a very skilful and humane dentist. His reasonable charges should attract to him all classes."

MR. GOODMAN, *Surgeon Dentist,*

(Late Manager for Messrs. Eskell,)

41, LUDGATE HILL (Opposite Old Bailey).

Hours 10 to 8.

Also at 68a, Market-street, Manchester; 30a, Bold-street, Liverpool; 57a, Boarlane, Leeds; 2, Piccadilly, Bradford; 2, Bank-street, Sheffield; 36, Gallowtree-gate, Leicester; 8, Pavilion Buildings, Brighton; 251, Sauchiehall-street, Glasgow; 29, Hanover-street, Edinburgh; 156, Union-street, Aberdeen, &c., &c.

DELIGHTFULLY PERFUMED BATHS.
USE

ORIENTAL AROMATIC SALTS.

FOR

BATH

AND

ALL TOILET

PURPOSES.

These SALTS, possessing great Hygienic properties, render the water very soft, and impart a most refreshing perfume.

The ORIENTAL AROMATIC SALTS are unrivalled for Beautifying and Preserving the Skin, rendering it soft and velvet-like, and for keeping the complexion perfectly bright and clear.

In all cases of Skin Diseases these Salts will be found invaluable.

To be had of all Chemists, Perfumers, and Stores.

SOLE PATENTEES:

S. TRAVADO & CO., 27, Jewry-st., London, E.C.

To be had also of Messrs. BREIDENBACH & CO., Perfumers to the Queen, 157b, NEW BOND-STREET, W.

THE
ENCORE WHISKY.
Lancet.—"Wholesome and pleasant."

THE
ENCORE WHISKY.
British Medical Journal.—"A safe stimulant."

THE
ENCORE WHISKY.
Medical Times.—"Very wholesome. May be safely used."

THE
ENCORE WHISKY.
Medical Press.—"Invaluable as an alcoholic stimulant."

THE
ENCORE WHISKY.
Medical Record.—"The purest of alcoholic stimulants."

THE
ENCORE WHISKY.
Sanitary Record.—"An excellent 'dietetic' stimulant."

THE
ENCORE WHISKY.
Practitioner.—"A safe stimulant."

THE
ENCORE WHISKY.
Food Reformer.—"All who value health should use it."

THE
ENCORE WHISKY.
Dr. Bartlett.—"Purest whisky I ever examined."

THE
ENCORE WHISKY.
Dr. Paul.—"Free from all injurious substance."

THE
ENCORE WHISKY.
Dr. Tichborne.—"Wholly free from all impurities."

THE
ENCORE WHISKY.
Dr. Macadam.—"Very wholesome and fine quality."
Sold Everywhere.
BERNARD & CO., Leith Distillery, Scotland.
Wholesale Depôt—Three Crown-square, Borough, S.E.

LEITH and LONDON.

The London and Edinburgh Shipping Company's First-class Steamships, **METEOR, IONA, MALVINA, MARMION, MORNA** ("Meteor," "Iona," "Malvina," and "Marmion" lighted by Electricity), or other of the Company's Vessels, are intended to Sail (till further notice) from **VICTORIA DOCK, LEITH,** every WEDNESDAY, FRIDAY, and SATURDAY, and from **HERMITAGE STEAM WHARF, WAPPING, E.,** every TUESDAY, WEDNESDAY, and SATURDAY.

FARES—First Cabin, including Steward's Fee, 22s.; Second Cabin, 16s. Deck (Soldiers and Sailors only), 10s.

RETURN TICKETS, available for Twelve Months (including Steward's Fee both ways)—First Cabin, 34s.; Second Cabin, 24s. 6d.

☞ *Provisions, &c., may be had from the Steward on Moderate Terms.*

Not responsible for Passengers' Luggage, unless booked and paid for.

Cheap Circular Tours round the Land's End, in connection with Clyde Shipping Co.'s Steamers.—Fare, 1st Cabin, 47s. 6d.; and by Bristol Channel, in connection with Messrs. Sloan & Co.'s Steamers.—Fare, 1st Cabin, 35s.—(Railway Fares extra).

Apply in London, to London and Edinburgh Shipping Company, Hermitage Steam Wharf, Wapping; Aberdeen Steam Navigation Co., 102, Queen Victoria-street, E.C.; G. W. Wheatley & Co., 23, Regent-street; Lavington Brothers, 69, Old Bailey; Edinburgh—Cowan & Co., 4, Princes-street; Glasgow—Cowan & Co., 23, St. Vincent-place; Greenock—D. Macdougall, 1, Cross Shore-street; or to Thomas Aitken, 8 & 9, Commercial-street, Leith.

Telegraphic Addresses: Leith, "Aitken;" London, "Edina."

MEMORY. LOISETTE'S System of Memory Training.

"Physiological and scientific in the highest degree."—Dr. Andrew Wilson (27th April, 1883).

"We again recommend those suffering from defective memory to give this system a fair and conscientious trial."—Dr. Andrew Wilson (18th Jan., 1889).

"The value of the fee returned to me twenty-fold."—Dr. Albert Carter (11th November, 1888).

Of great advantage to a strong memory; incalculable aid to a weak one."—Dr. J. M. Buckley.

"Able to give the gist of any book after reading it once."—Rev. J. M. Macdonald, M.A.

"Easily acquired and very interesting."—Rev. S. Bell, M.A.

"Cure of mind wandering and increase of vocabulary."—J. Macgregor, M.A.

"Top in examination."—T. Tait, M.A.

LESSONS BY POST OR VOICE.

Opinions of Mr. Proctor and of many members of the Medical, &c., Professions, Free.

A. LOISETTE, 57, New Oxford-street, London.

VAN HOUTEN'S COCOA

EASILY DIGESTED—**PURE**—SOLUBLE—MADE INSTANTLY.

Incomparably THE BEST & MOST ECONOMICAL.

Very strong and nutritious,
THIS Cocoa is cheaper and more satisfying than tea.

"Admirable,"
"flavour perfect,"
"& so pure."
} *BRITISH MEDICAL JOURNAL.* —
"Delicate aroma,"
"pure & unmixed,"
"goes a long way."
} *LANCET.*

"Its purity is beyond question." *"Once used, always used."—HEALTH.*

SAMPLE TINS GRATIS—through your Grocer or Chemist.

CHATTO & WINDUS'S CHEAP EDITIONS OF POPULAR NOVELS.

PICTURE COVERS, PRICE TWO SHILLINGS EACH.

By JAMES PAYN.
Lost Sir Massingberd
A Perfect Treasure
Bentinck's Tutor
Murphy's Master
A County Family
At Her Mercy
A Woman's Vengeance
Cecil's Tryst
Clyffards of Clyffe
The Family Scapegrace
Foster Brothers
Found Dead
Best of Husbands
Walter's Word
Halves
Fallen Fortunes
What He Cost Her
Humorous Stories
Gwendoline's Harvest
£200 Reward
Like Father, Like Son
Marine Residence
Married Beneath Him
Mirk Abbey
Not Wooed but Won
Less Black than We're Painted
By Proxy
Under One Roof
High Spirits
Carlyon's Year
A Confidential Agent
Some Private Views
From Exile
A Grape from a Thorn
For Cash Only
Kit: A Memory
The Canon's Ward
Talk of the Town
Holiday Tasks

GEORGE AUGUSTUS SALA.
Gaslight and Daylight

By E. C. PRICE.
Valentia
Mrs. Lancaster's Rival
Gerald
The Foreigners

By CHARLES READE.
It is never Too Late to Mend
Hard Cash
Peg Woffington
Christie Johnstone
Griffith Gaunt
Put Yourself in His Place
The Double Marriage
Love Me Little, Love Me Long
Foul Play
The Cloister and the Hearth
The Course of True Love
Autobiography of a Thief
A Terrible Temptation
The Wandering Heir
A Simpleton
A Woman-Hater
Singleheart and Doubleface
Good Stories of Men and Other Animals
Readiana
The Jilt

By Mrs. J. H. RIDDELL.
Her Mother's Darling
Prince of Wales's Garden Party
Weird Stories
Fairy Water
The Uninhabited House
The Mystery in Palace Gardens

By F. W. ROBINSON.
Women are Strange
The Hands of Justice

By JAMES RUNCIMAN.
Skippers and Shellbacks
Grace Balmaign's Sweetheart
Schools and Scholars

By W. CLARK RUSSELL.
Round the Galley Fire
On the Fo'k'le Head
In the Middle Watch
A Voyage to the Cape

By BAYLE ST. JOHN.
A Levantine Family

By JOHN SAUNDERS.
Bound to the Wheel
One Against the World
Guy Waterman
Two Dreamers
The Lion in the Path

By KATHARINE SAUNDERS.
Joan Merryweather
Margaret and Elizabeth
The High Mills
Heart Salvage
Sebastian

By GEORGE R. SIMS.
Rogues and Vagabonds
The Ring o' Bells
Mary Jane's Memoirs
Mary Jane Married

By ARTHUR SKETCHLEY.
A Match in the Dark

By T. W. SPEIGHT.
The Mysteries of Heron Dyke
The Golden Hoop

By R. A. STERNDALE.
The Afghan Knife

By R. LOUIS STEVENSON.
New Arabian Nights
Prince Otto

By BERTHA THOMAS.
Cressida
Proud Maisie
The Violin Player

By W. MOY THOMAS.
A Fight for Life

By WALTER THORNBURY.
Tales for the Marines
Old Stories Re-told

By T. ADOLPHUS TROLLOPE.
Diamond Cut Diamond

By ANTHONY TROLLOPE.
The Way we Live Now
The American Senator
Frau Frohmann
Marion Fay
Kept in the Dark
Mr. Scarborough's Family
The Land-Leaguers
The Golden Lion of Granpere
John Caldigate

By F. ELEANOR TROLLOPE.
Like Ships upon the Sea
Anne Furness
Mabel's Progress

By J. T. TROWBRIDGE.
Farnell's Folly

By IVAN TURGENIEFF, &c.
Stories from Foreign Novelists

By MARK TWAIN.
Tom Sawyer
A Tramp Abroad
A Pleasure Trip on the Continent of Europe
The Stolen White Elephant
Huckleberry Finn
Life on the Mississippi
The Prince and the Pauper

By C. C. FRASER-TYTLER.
Mistress Judith

By J. S. WINTER.
Cavalry Life
Regimental Legends

By H. F. WOOD.
The Passenger from Scotland Yard

The above is a Selection only. The Complete List of nearly FOUR HUNDRED NOVELS will be sent free upon application.

LONDON: CHATTO & WINDUS, PICCADILLY, W.

From one to three of these may be taken after a meal. As the chemist above mentioned said, soda will relieve a sour stomach, but for downright indigestion, with its accompanying complement of grievous symptoms, Pepsin is a food aid of the greatest value.

A CHAT ABOUT SOAPS.

The importance of keeping the skin in a perfectly healthy condition is hardly realized even by the mass of physicians themselves. The popular notion that an eruption indicates poison in the blood, which might cause great harm if it did not come out, is without any real scientific basis. The more the structure and use of the skin are studied, the more wonderful this tissue appears. If by any means its function is entirely suspended for a few days death results, so that, aside from the repulsive nature and appearance of eruptions, there is a vital reason why the skin should be pure and healthy. To attempt to cure eruptions by internal medicines proves a failure in nine cases out of ten, and all external applications should always be of the blandest and most harmless nature possible; indeed it is well, in attempting to cure any skin disease or eruption, to begin with mild remedies first, and if these do not answer proceed to more powerful ones next. Relief should not be too soon looked for; time is required in nearly all cases.

The benefit that follows from proper daily care of the skin, independently of medicines or medical treatment, is often surprising. Repeatedly eruptions upon the shoulders, and papules on the body and thighs will disappear in the course of a month by washing with pure soap every day, the water being quite warm twice in the week, and cold the rest of the time. Ordinary alkaline soaps must be scrupulously avoided, and a beautiful picture upon the box by no means proves that the soap within is pure. The best soap to use is one which, like Vinolia Soap, contains an excess of fat instead of a lot of free soda or potash like the ordinary soaps. Soda or potash extracts the oil from the skin, and swells the horny scales upon the surface. Under such circumstances the outer layer of the skin fails to fulfil its proper use, and irritation, inflammation, and eruptions become worse or are produced.

A word may be said about hair. If one have a predisposition to early become grey, washing with an alkaline soap will at once turn many of the hairs white, but in a few days the normal colour of the hair may return; but all this only hastens the day when the hair shall be permanently grey. Grief acts in a similar way, and so does fright, and many are the cases recorded where a head of raven locks has been turned as white as a badger, with fright, in a single night. Not oftener than once a week should the hair and head be washed, and then no strong alkalies or alkaline soaps should be put to it, but a superfatted soap, such as that we have already mentioned, ought to be employed.

Charity begins at home but ought not to end there.

Young Man to Coroner: "I see by the newspapers that there is an unclaimed body at the morgue." Coroner: "Yes, sir." Young Man: "I think the body is that of a friend of mine." Coroner: "Was there any peculiarity about your friend by which you could identify his remains." Young Man: "Yes, sir; he stuttered horribly."

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

"SPRING CLEANING."

Those who engage in "spring cleaning," actuated by a natural taste for cleanliness, may not fully understand the importance of such labour as a sanitary measure, but they could hardly engage in a more valuable work in this regard. The accumulations of filth through the winter, remaining for a greater portion of the time in a frozen state and unobserved, or at least disregarded, are brought to view in the warm days of the spring when their harmful vapours are liberated and enter the open windows and doors of dwellings. Odours thus arising may disclose these accumulations, but the absence of these odours is no evidence that the poison vapours are not present. There are always little corners and nooks about dwellings and yards in which pools of water are frozen and snow drifted. In occasional thaws through the winter these saturate the ground, and the successive rains, snows, and thaws leave in the spring many little nests in which disease germs incubate and multiply.

There is probably no agent more active in depositing these germs than snow, and it is the more harmful, as it is so generally considered pure. While the bacteriology of ice has been more successfully studied and is better understood, much has been learned regarding the impurities of snow and its capacity for holding and conveying the germ of disease. A contribution on that subject was published recently in the *Vratch* (St. Petersburg), by Dr. Ianovsky, who examined a February snow in its purest state. In his bacterioscopical examinations he discovered many matters of interest, and has added important knowledge to the discoveries made known regarding ice and hail.

The observer found: First, that even when collected during its fall, snow is invariably found to contain living bacteria in considerable numbers, varying from 34 to 463 per one cubic centimètre of snow-water; second, that their number does not decrease from exposure of snow to low temperature (16 degs. C.) for several days; third, that the following three species of microbes are met with constantly in great numbers: *a*, a large diplococcus composed of ovoid cocci, endowed with energetic motion, and characterized by its rapidly liquefying jelly; the test-tube culture on the third day, forming greenish colonies along the track of the needle, assumes the shape of a funnel-like sac with a whitish flocculent deposit, while on the fifth the whole medium becomes liquefied, the precipitate sinking to the bottom; on agar a pale greyish-white streak is formed at the sight of inoculation, on potato a fairly thick white film; *b*, small-sized cocci, often arranged two and two, energetically mobile, and slowly growing on jelly without liquefying the medium, the growth proceeding slowly along the track of the needle in the shape of a narrow stripe consisting of non-coalescing minute points of a yellow colour, while on the surface the colony is seen as a greyish-white circular slightly prominent patch with somewhat fringed edges; on agar the coccus forms a white streak with sinuous edges, on potato a grey film with a brownish tint; *c*, very large cocci liquefying jelly as late as three weeks after inoculation, and growing along the track of the needle in the form of a sharply-defined streak of a beautiful pink colour, with a slightly elevated pink circular patch or

"can" on the surface; on agar the microbe forms a freely-spreading white film with a rosy tint, on potato a thick, tallow-like, pink coat, with sharply-defined fringed contours; fourth, that the first two species (*a* and *b*) are also met with commonly in the water of the River Dnieper, which flows through the town, while the peculiar pink micrococcus seems to occur only in snow. Fifth, that, generally speaking, the microbes liquefying jelly in fallen or recently fallen snow are met with invariably in far greater numbers than in snow which has been on the ground for some time; this, in fact, very often contains only such bacteria as do not liquefy gelatine. Sixth, that the bacteria originate partly from aqueous vapours which are transformed into snow, partly and chiefly from the air—that is, they are carried away by snowflakes on their passage through the atmosphere.

Other discoveries were made, and enough is known to make the work of cleaning off the grounds about buildings a very important sanitary precaution. We walk about in the frosty air of winter feeling its invigoration, and little dream that, locked in the embrace of ice and snow, lie germs which, in the spring sun, awake to renewed life and start on their course of destruction. These nooks and pools should not only be well cleaned, but the ground beneath should be disinfected, that all the air about may be rendered sweet and pure and the menace of health removed.

THE IMPORTANCE OF WATER.

That a man's body may be kept going as a machine in perfect working order, it must (as a self-feeding and self-reconstructing and repairing machine) be supplied with the materials of which it is itself composed. Thus the body, chemically regarded, consists of two chief classes of substances. There are, firstly, the nitrogenous substances represented by the albumen of meat and eggs, the casein of milk, the gelatine of bone, the legumin of peas and beans, the fibrin of blood, and the gluten of flour and like compounds. Then, secondly, come the non-nitrogenous substances, represented by the fats and oils, starches and sugars, by the minerals required for the body's build and functions, and by water. Now, all of these things we must find in our food; and we must further obtain them in due proportions. The average man engaged in ordinary work requires per day about five ounces of nitrogenous matter, fifteen ounces of starches and sugars, and three ounces of fat, in order to maintain his body in working order, and to enable that body to develop "energy," which is only another name for the power of doing work.

Of minerals, he will require so much (a small amount) per day; but of water he will demand for health a relatively large quantity (nearly sixty fluid ounces), whether in the form of water by itself, or in that of beer, tea, coffee, milk, or other beverages. In truth, water is above all our other foods in importance, for various plain and sufficient reasons. First of all, it forms more than two-thirds by weight of the whole body. Even the "dry bones" contain, in 1,000 parts, 130 parts of water; while in 1,000 parts of blood, flesh, and brain there exist 795, 750, and 789 parts of water respectively. Then, water is required for the solution and digestion of all other kinds of food, and it enters in the most intimate manner into the composition of the *protoplasm* or living matter of the body. For the removal of the waste matters, which are inseparable from life's wear and tear, water is also a necessity, and in this act of excretion it is perpetually being drained off by lungs, kidneys, and skin.

Thus it is that thirst becomes a much more irritating and severe sensation than hunger. The latter sensation affects, at the outset at least, only the stomach; whereas, thirst means the cry of all the tissues for water, and in this sense implies a generalized form of pain which becomes veritable torture when carried to any great extreme. Of all foods, water is thus the most important; and we certainly discover the extent of its importance when we come to deal with the phenomena of starvation and fasting. If from a human being of fair average health and build there are removed all sources of nourishment,—water and solids together,—he dies in from six to eight days. But if he is provided with even a moderate supply of water life may be prolonged (in the absence of all other forms of food) for lengthy periods. It is not meant to be suggested that water supports the body perfectly, or that the starving man, supplied with this fluid, will survive at the end of his fasting tether.

We have seen that the body requires its due and daily supply of nitrogenous and non-nitrogenous foods in order to maintain its natural and healthy state. But water is assuredly the only food on which an animal can be "kept going," to use a familiar phrase, for periods varying from twenty to over forty days, in the absence of all other kinds of nutriment. The animal machine, indeed, in such a case is working at very low pressure,—so low that its powers of work are gradually annihilated,—yet on water alone, in cases of actual starvation, it may continue for weeks to husband its physical resources until a happy chance places it within reach of the necessary and welcome food.

Adhesive Qualities of Onions. — Paper pasted, gummed, or glued on to metal, especially if it has a bright surface, usually comes off on the slightest provocation, leaving the adhesive material on the back of the paper, with a surface bright and slippery as ice. The cheaper description of clock dials are printed on paper and then stuck on zinc, but for years the difficulty was to get the paper and metal to adhere. It is, however, said to be now overcome by dipping the metal into a strong solution of washing soda, and afterwards rubbing it perfectly dry with a clean rag. Onion juice is then applied to the surface of the metal, and the label pasted and fixed in the ordinary way. It is said to be almost impossible to separate the paper and the metal joined in this way. Probably metal show tablets might be successfully treated in the same way.

Fifth Edition.—Now Ready.—Greatly Enlarged, and completely Revised.

"A Book every Young Man should read."

"A Lecture to Young Men on Purity of Life and the Preservation of Health." By A Graduate. Price One Shilling, or post-free, 1s. 1d., from Henry Renshaw, Medical Publisher, 356, Strand, London, W.C.

This pamphlet, now being issued in its Fifth Edition, forms a complete refutation of quackery of all kinds, and is a safe and reliable guide, from the medical standpoint, to all young men. Every Youth should read this pamphlet as a guide to the safe conduct of life in a moral and physical sense. Full directions for the treatment of "Nervous Debility" so-called, and allied ailments, are also given. Thousands of sufferers have welcomed this pamphlet as a veritable beacon-light to health and purity of life.

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

THE SHADY SIDE OF BRAIN WORK.

PAPERS ON DREAMS, MESMERISM, AND ALLIED TOPICS, BY VARIOUS WRITERS.

FOURTH PAPER.

THE PSYCHOLOGY OF SPIRITUALISM.

By Joseph Jastrow.

In 1848 from the town of Hydeville, New York, came the somewhat startling discovery that certain knockings, the source of which had mystified the household of one of its residents, seemed to be intelligently guided and ready to appear at call. Communication was established by agreeing that one rap should mean "no," and three raps "yes;" to which was afterward added the device of calling off the alphabet and noting at which letters the raps occurred; in this way the rapper revealed himself as the spirit of a murdered pedlar. Within five years the news of this simple and childish invention had called into existence thousands of spirit-circles, had developed wonderful "mediums," through whose special gifts the manifestations were ascribed, had amassed a vast store of strange testimony, and the movement had become an epidemic; and this, too, in spite of the fact that, in 1851, the peculiar double raps occurring in the presence of these Fox sisters were satisfactorily explained as due to the rapid partial dislocation and resetting of the knee-joint, and perhaps other joints, the raps failing to occur when the Fox sisters were placed in a position in which the leverage necessary for this action was denied them, and being perfectly repeated, at will, by a lady gifted with the same peculiarity.

Since this article was written, Margaret Fox (now Mrs. Kane) and Katie Fox (now Mrs. Jencken) have publicly confessed that the raps to which they as children gave rise were produced by dislocations of the toes. They have publicly shown the method of their production, and seem earnestly desirous of retarding the growth of the movement to which they so unintentionally gave rise. They plead for our mercy, on the ground that the movement was started when they were too young to appreciate what was being done, and that, when they realized the fraud and the encouragement they were receiving, it was too late or too difficult to retract. It is a pity that this confession comes so late, and the more so, that it has been made under such sensational surroundings. Had the confession been placed in the hands of a respectable scientific body, such as the Seybert commission, a more lasting service to mankind would have resulted. But none the less is it proper to derive from this confession a valuable lesson for intending investigators, and a characteristic proof of the moral taint in which the germs of this growth were laid and have developed. To-day spiritualists count their adherents by millions. In 1867 there were estimated to be 3,000,000 in America. They publish about 100 journals, hailing from all parts of the world (twenty-six of them appear in America), and the manifestations have increased in number and variety. Spirit-forms are seen and hold converse; they write on slates in mysterious ways, they move tables, play musical instruments, send flowers and messages, tie knots in an endless cord, and so on; all, however, only in the presence of "mediums."

It would seem self-evident that so momentous a conclusion should not be accepted without the most rigid scrutiny; that only after every attempt to explain the phenomena by laws already understood had failed, would recourse be had to a supernatural origin, and only when the truth of such a theory had been repeatedly verified by a variety of evidence would it be definitely accepted. The history of psychic epidemics shows too clearly that any such logical procedure is made impossible by the white heat of the emotional interest with which such movements always spread. There is always a large class of people yearning for a possession that shall be mysterious and unshared by the common herd, anxious to embrace any such strange and novel doctrines as spiritualism advanced, simply because of their strangeness and novelty. Such persons find no satisfaction in investigating, but only in believing. With such the movement began; but, as it spread, it found its way into higher circles, securing the adherence of many men and women of decided culture and intellectual acumen, and even enrolling in its cause a few eminent representatives of the world of learning. The spiritualists grew bold and defied investigation; investigations were frequently made, and resulted, according to the ability, impartiality, and technical fitness of the investigators, about as frequently in exposure as in conversion. The conversions were always trumpeted far and wide, while the mediums convicted of fraudulent procedure quietly and successfully continued their career. A prominent spiritualist openly announces that Slade (perhaps the most famous living medium) "now often cheats with an almost infantile audacity and *naiveté*, while at the same or next *séance* with the same investigators," genuine spiritualistic phenomena occur. If this is the moral atmosphere of spiritualism, one can readily understand the opinion of another disciple, that the true spirit in which to approach its study is "an entire willingness to be deceived."

With the revival of interest fostered by the Society for Psychic Research, the investigation of spiritualistic manifestations has been undertaken with more of a scientific appreciation of the problems therein involved; and within the last few years have appeared the results of several inquiries that deserve to register a turning-point in the career of this mischievous superstition and to hasten the day of its abandonment by all sensible men.

Mr. Henry Seybert, an enthusiastic spiritualist, bequeathed to the University of Pennsylvania a sum of money on the condition that this university should appoint a commission to investigate modern spiritualism. This commission has published a preliminary report—*Preliminary Report of the Commission appointed by the University of Pennsylvania, to Investigate Modern Spiritualism* (Philadelphia, 1887. Lippincott. Pp. 159). The members of the commission are: Dr. William Pepper, Dr. Joseph Leidy, Dr. G. S. Koenig, Prof. R. E. Thompson, Prof. G. S. Fullerton, Dr. H. H. Furness, Mr. Coleman Sellers, Dr. J. W. White, Dr. C. B. Knerr, and Dr. S. Weir Mitchell. They began with an entire willingness to accept any conclusion warranted by facts; and their chairman, Dr. H. H. Furness, confessed "to a leaning in favour of the substantial truth of spiritualism." They have examined many of the most famous mediums, and the manifestations that have contributed most to their fame. Their verdict, individually and collectively, is the same regarding every medium with whom they saw anything noteworthy: *gross, intentional fraud throughout.* The mediums were treated with the utmost fairness

and courtesy; their conditions were agreed to and upheld; every one, in each kind of manifestation, was either caught in the act of trickery, or the trick was repeated and explained by one of the commission. This testimony goes far to justify the substitution of "trick" for "manifestation," of "senseless cant" for "spiritualistic explanation," of "adroit conjurer" for "medium." The accumulative force of this conclusion can only be appreciated by a reading of the report itself. It is often claimed that, while mercenary purposes can explain the existence of professional mediums, the manifestations of private mediums remain as the bulwark of faith. It is doubtless true that the method of investigating private manifestations must be a different one, and this yet remains to be done in a careful and scientific manner. The difficulty has always been in the unwillingness of private mediums to appear before examining bodies. It must also be remembered that amateur mediums, even when there was no ground for suspicion, have been exposed as frauds (*vide Seybert Report*, p. 122); and the passion for deceiving, so characteristic of hysterical natures, is as strong as the greed for gain. The subject merits a separate discussion. A few examples of the kind of trickery exposed must here suffice.

Dr. Slade, whose mediumship has convinced many of the most eminent believers in spiritualism, including the famous Zöllner *coterie*, produces communications on a slate held beneath a table, in answer to questions asked in writing or verbally, sometimes openly and sometimes in folded slips of paper. It was soon discovered that the character of this writing was of two kinds. The long messages were neatly written, with the *i's* dotted and the *t's* crossed, and often produced unasked, or not in direct answer to a question; while the short ones, in answer to questions asked only shortly beforehand, were scrawly, hardly legible, and evidently written without the aid of the eye. This is always cited as one of the triumphs of spiritualism. As usually told, it reads that a few eminent scientists, especially fitted to investigate such matters, were convinced of the supernatural origin of Slade's performances, and one of their number (Zöllner) found the theory of their explanation in harmony with the mathematical notions of the fourth dimension of space. Prof. G. S. Fullerton, the secretary of the Seybert commission, has interviewed Zöllner's associates, and finds that, "of the four eminent men whose names have made famous the investigation, there is reason to to believe one, *Zöllner*, was of unsound mind at the time, and anxious for an experimental demonstration of an already accepted hypothesis (the fourth dimension of space); another, *Fechner*, was partly blind, and believed because of Zöllner's observations; a third, *Scheibner*, was also afflicted with defective vision, and not entirely satisfied in his own mind as to the phenomena; and a fourth, *Weber*, was advanced in age, and did not even recognize the disabilities of his associates." None knew anything about conjuring, and, deservedly honoured as these men are in their own specialties, they were certainly not fitted to compete with a professional like Slade.

Sulphonal.—Dr. Perregaux, of Montreux, says that sulphonal is particularly suitable for cases of nervous insomnia; it is also very useful in many cases of sleeplessness from severe neuralgic pain. He gives it usually in doses varying from 1·5 to 2 grammes, which is sufficient to secure a quiet and refreshing sleep of five or six hours' duration.

THE USE AND ABUSE OF MILK.

It was Fothergill, we think, who first called attention to the abuse of milk as an article of food, or rather we should say, to using it as a beverage instead of as a food. The truth of his views on this subject have lately been forcibly demonstrated to us in the persons of several cases of acute rheumatism. They had all been large drinkers of milk, and their temperatures were over 103, and the pain was excesssively severe when they came under treatment. By putting them on a diet of thin water gruel, suitably flavoured, and a mixture containing ten grains of salicylate of soda, to be taken in half a tumbler of weak lemonade every two hours until relieved, in every case the symptoms had almost disappeared within thirty-six hours; and the urine, which had been dark and loaded, at the same time became clear.

It seems to us that in rheumatic cases the blood is in a condition of saturation with water, coming from the defective combustion of nitrogenous food which ought to, but does not, reach the ultimate stage of urea, and it only requires a local slowing of the circulation, or a temporary cooling of an extremity, in order to have a deposit of the sharp-pointed crystals in the joints, ligaments, or muscles, which causes such excruciating pain. It is a fact, proved by experiment, that certain articles of diet increase the excretion of uric acid; these are milk, cheese, meat, and beer, the latter acting probably by preventing other food from being burned, as it burns much easier than they. Some great medical authority of the old school once said that the best cure for rheumatic fever was six weeks in bed, and as the patient was generally put on an exclusively milk diet that may perhaps have been the explanation.

The idea is general among people that the more milk they could drink the better for their health; and so they drink two or three tumblersful of milk as though it were water. The moral of all this is that though milk is one of the best and most nutritious of foods, being indeed the only perfect food, it is the worst possible beverage, being already saturated, and therefore being utterly useless for the purpose of washing out effete matter from the blood.

Extraordinary stories are told of the healing properties of a new oil, which is easily made from the yolks of hens' eggs. The eggs are first boiled hard, and the yolks are then removed, crushed, and placed over a fire, where they are stirred until the whole substance is just on the point of catching fire, when the oil separates and may be poured off. One yolk will yield nearly two teaspoonfuls of oil. It is in general use in South Russia as a means of curing cuts, bruises, and scratches.

J. Burns Gibson, Esq., M.A., M.D., writes to Spratt's Patent Limited:—"5, Greenhill Villas, Harlesden, London, November 27th, 1888.—I have had ample and many opportunities of testing the value for bodily health and vigour of your Whole Meal Biscuits. For children, I find an almost perfect farinaceous food, containing all the elements of bone, brain, and muscle nourishment. They may be sometimes steeped and soaked with advantage in milk or water; but, eaten as they are sold, they have a very special utility, as teaching and encouraging that most indispensable habit of patient and perfect mastication and insalivation. To adults of constipated habit of body, their use is beyond doubt. This has been proved in my experience. In overcoming the evil habit of 'bolting' food, so common a cause of dyspepsia amongst busy city men and others, they furnish the material of an adequate discipline; while, used by ladies and people of sedentary habits,—say, two or three daily,—I find they obviate the need to have recourse to 'physic.'"—Of all dealers, per tin about 7 lbs., 2s. 9d.; per tin about 14 lbs., 5s. 3d.; or of Spratt's Patent Limited, London, S.E.—[Advt.]

SCOTCH TWEEDS

DIRECT FROM FACTORY.

If you want a really good ALL-WOOL SCOTCH TWEED, at Maker's Prices, in Worsted, Saxony, or Cheviot, *WRITE FOR PATTERNS.* All our own Manufacture. Any length cut. Splendid Selection. Tailors supplied with bunches of Patterns. Parties' own Wool made into Cloth. Heavy Tweeds, 1s. 9d. per yard; Light Tweeds, 1s. 2d. per yard. Blankets, Rugs, Wincеys, Flannel, &c. Carriage of Wool paid, and Patterns sent free.

WOOL.

IMPORTANT NOTE.—All Wools sent to be made into Heavy Tweeds, Blankets, Crumbcloths, &c., &c., are made from two-ply yarns. This makes the Cloth finer and wear much longer than when it is done in the ordinary way. Cloth will be returned in One Month from receipt of Wool.

A. COLQUHOUN, Manufacturer,

GALASHIELS, SCOTLAND.

RESPECTABLE AGENTS WANTED IN EVERY DISTRICT NOT YET REPRESENTED.

THE PERFECT WATER FILTER

(HOWIE'S PATENT.)

CHEAP! EFFECTIVE!! AND EASILY CLEANED!!!

This Filter ceases to act when soiled, thus compelling people to clean it, which anyone can do in a few minutes; it is therefore

A SAFETY FILTER,

and not a delusion, as most Filters soon come to be.

J. & R. HOWIE, Hurlford, Kilmarnock, N.B.

Filters may be had at 15, GARLICK-HILL, LONDON, E.C. Wholesale Agents Wanted in Districts where none have been appointed.

SOLD BY ALL CHEMISTS, &c.

PERFECTED IN ONE OPERATION BY THE PROCESS INVENTED BY MÖLLER IN 1852.

INCOMPARABLE, PALATABLE, PERFECT, PURE.

MÖLLER'S COD LIVER OIL

CAPSULED BOTTLES ONLY.

OR SENT FREE BY PARCEL POST ONE BOTTLE 2/3, TWO BOTTLES 4/- BY PETER MÖLLER, 43, SNOWHILL, LONDON, E.C.

REGIST'D TRADE MK.

MÖLLER'S COD LIVER OIL

BE WARY OF RECENT IMITATIONS! SO EXTENSIVELY PUFFED NOW.

IS SIMPLY A *pure* OIL! IT CONTAINS NONE OF THE 50—60 PER CENT. OF WATER NECESSARILY IN EMULSIONS—

CHEAP COMMODITIES USUALLY CHARGED AT THE PRICE OF PURE OIL.

OIL.

BE SURE YOU HAVE *NEW* OIL!

EVERY BOTTLE OF RECENT PRODUCTION HAS THE DATE PERFORATED ON BOTH LABELS.

4/6 IRISH LINEN COLLARS.

Gent's Four-fold all Pure Linen Collars, all sizes and shapes, 4s. 6d per dozen. SAMPLE WHITE SHIRT, Linen Fittings, 2/6, 3/6, 4/6, 5/6, & 6/6 each, post free.

IRISH CAMBRIC POCKET HANDKERCHIEFS

Ladies' Size, 2s. 3d. per dozen. Gent's Size, 3s. 6d. per dozen. Samples of Linen Goods and Price Lists Free to all Parts. ALL PARCELS sent CARRIAGE PAID.—G. R. HUTTON & CO., Larne, Belfast.

TOO FAT.

DR. GORDON'S Elegant Pills Cure STOUTNESS rapidly and certainly. State height, weight, and send 2/9, 4/6, or 11/-, to Dr. Gordon, 10, Brunswick Square, London, W.C.

Indigestion—Constipation.

DAHL'S DYSPEPSIA CAKES.

Recommended by several Medical Men.

"You know what Mignonette means in the language of flowers, 'Your qualities exceed your charms.' This applies to the Cakes."—J. Milner Fothergill, M.D. In Boxes, 1s., 2s. 6d. Powdered Cakes, for delicate cases, 2s. 6d.

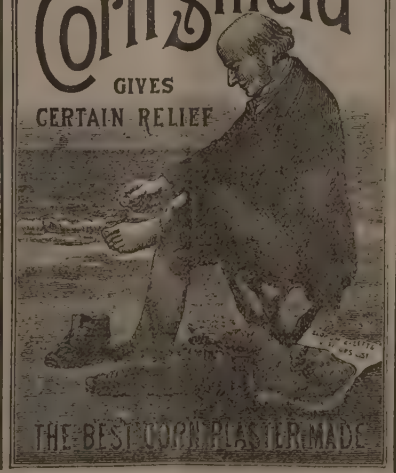
"THE CHILDREN'S BREAD"—Special Brand for Children, 2s.

OF ALL CHEMISTS.

DAHL'S AGENCY, 41, EASTCHEAP, LONDON

ALLCOCK'S Corn Shield

GIVES CERTAIN RELIEF

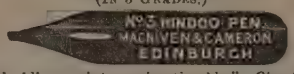


THE BEST CORN PLASTER MADE

"They come as a boon and a blessing to men, The Pickwick, the Owl, and the Waverley Pen."

THE HINDOO PEN.

(IN 3 GRADES.)



"With oblique points, are inestimable."—*Oban Times.*

ASSORTED BOX OF M. & C.'s PENS, 1s. 1D. BY POST.

MACNIVEN & CAMERON, EDINBURGH.

TOWLE'S

Pennyroyal & Steel Pills

FOR FEMALES

Quickly correct all irregularities and relieve the distressing symptoms so prevalent with the sex. Boxes, 1s. 1½d. and 2s. 9d., of all Chemists. Sent anywhere for 15 or 34 stamps, by

THE LINCOLN AND MIDLAND COUNTIES DRUG COMPANY, LINCOLN.

BEWARE OF IMITATIONS.

THE SAFEST TONIC.

Sold by all Chemists, in Bottles (in Portable Card Case) with Drop Measure complete.

Prices 3s. and 4s. 6d. Sufficient for 3 and 6 weeks' treatment respectively.

FER BRAVAIS.

All who want IRON should try it.

LANCET.—"'*Colloid hydrate (of iron) in aqueous solution.' Neutral, tasteless. A beautiful and interesting preparation.*"

BRITISH MEDICAL JOURNAL.—"*It has all the good effects of iron without producing constipation or disturbing the digestion, and it does not blacken the teeth.*"

General Nursing Institute,

5 & 4, HENRIETTA-STREET,

COVENT GARDEN, LONDON, W.C.

Established 1862. Solely under Medical Direction.

HOSPITAL TRAINED NURSES for every description of disease—MEDICAL, SURGICAL, MENTAL, and MIDWIFERY—can be obtained at this Institute on application to the Secretary or Lady Superintendent at a moment's notice, being resident in the Home.

MALE ATTENDANTS and NURSES specially for FEVER cases.

Telegraphic Address, "Nursing Institute, London."

NOT FARINACEOUS. MELLIN'S FOOD.

MELLIN'S FOOD for INFANTS and INVALIDS.

An artificial substitute for Mother's Milk for Infants, and a Perfect Food for Invalids. This Food is prepared from the soluble extracts of cereal grains, and, unlike the "Farinaceous Foods," is perfectly **FREE FROM STARCH.** It is a well known physiological fact that starchy substances cannot be digested by young children, the natural food of an infant—Mother's Milk—contains no starch, no provision is made by nature, therefore, in the case of infants for the digestion of that body. The ferments of saliva and pancreatic juice, which later become the actual agents in converting starch into grape sugar, are wanting. MELLIN'S FOOD, being free from starch, and rich in soluble Carbohydrates, Albuminoids, Phosphates, Potash, and other blood salts, forms a perfect food for young children.

TRADE MARK

ORA ET LABORA

MELLIN'S

LACTO-GLYCOSE

OR

MILK FOOD.

Price 2s. and 3s. per Bottle.

In this preparation Milk is incorporated with the Food in the process of manufacture, thus making it specially suitable where a difficulty exists in procuring fresh cows' milk, as, for instance, on board ship and in hot climates.

Sample and Prospectus on application to the Inventor and Manufacturer,

G. MELLIN, Marlboro' Works. Peckham, S.E.

INTERESTING ARTICLES.

SETS of the BACK NUMBERS of "HEALTH," containing completed Serial Articles on various important Health Topics, may be had on remitting cost of the numbers and stamps for postage.

The following subjects are treated:—

SHALL I SMOKE? In No. 231.
IS SNUFF-TAKING UNHEALTHY? In No. 218.
SOME HINTS FOR THE CURE OF FATNESS. In Nos. 213, 225.
PALPITATION AND ITS TREATMENT. In No. 216.
SCARLET FEVER. In Nos. 220, 230, 232.
DRESS AND UNDRESS. In Nos. 216, 217.
NURSING. In Nos. 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219.
HATS AS A CAUSE OF BALDNESS. In No. 215.
HOUSE CONSTRUCTION IN RELATION TO HEALTH. In Nos. 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234.
HEALTHY HOLIDAYS. In Nos. 223, 224, 225, 226, 227, 229, 230.
SLEEP WALKING. In Nos. 72, 73, 74, 75, 77, 79, 80.
INFANTS. In Nos. 100, 101, 102, 103, 104, 105, 106, 107.
PHYSICAL TRAINING FOR CHILDREN. In Nos. 94, 95, 96, 97, 98, 118, 119, 120, 121, 122, 123.
TRICYCLES, AND THEIR RELATION TO HEALTH. In Nos. 61, 63, 64, 65, 66, 68, 70, 71, 73, 74, 76, 78.
DIGESTION. In Nos. 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105.
WHAT TO DO WHEN FEVER INVADES THE HOUSE. In Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.
THE HAIR, SKIN, AND TEETH. In Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.
BURIED ALIVE. In Nos. 154, 155, 156, 157, 158, 159, 161, 163, 164.
HYDROPHOBIA: ITS NATURE, CAUSES, AND TREATMENT. In Nos. 20, 21, 23, 24, 25, 26.
CALISTHENICS. In Nos. 44, 45, 46, 47, 48, 49, 51, 52, 54, 59, 61, 62.
ECONOMICAL MEALS. In Nos. 48, 49, 50, 51, 52, 53, 54, 55, 56.
PUBLIC PARKS AND OPEN SPACES. In Nos. 57, 58, 60, 62, 64, 66, 71, 74, 76.

The price of numbers 1–156 has been increased to 4d. each, as, in consequence of the great demand for them, they are now nearly out of print. Nos. 157 to date may be had, price 2d. each.

LONDON: A. P. WATT, 2, PATERNOSTER-SQUARE, E.C.

ADVERTISEMENTS IN "HEALTH."

TARIFF PER INSERTION.

Whole Page	£5 5 0
Half Page	2 12 6
Quarter Page	1 6 6
Eighth of Page	0 13 6

Smaller Spaces *pro rata*.

Terms of Subscription per annum.

Including Postage in the United Kingdom, to the Continent, Canada, or the United States	£0 10 10
Including Postage to Australia, New Zealand, South Africa, or the West Indies	0 12 0
Including Postage to the East Indies and China (via Brindisi)	0 15 0

OFFICE: 2, PATERNOSTER-SQUARE LONDON, E.C.

NEW BOOK by DR. ANDREW WILSON.

Just Published. Crown 8vo, price 6s.

STUDIES IN LIFE AND SENSE.

BY

DR. ANDREW WILSON.

With numerous Illustrations.

LONDON: CHATTO & WINDUS, 214, PICCADILLY, W.

Jottings from the Journals

" Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Dirt and Disease.—One of the inconveniences as well as dangers of winter is the lack, or seeming lack, of proper facilities for body-bathing and cleanliness. If possible, bathing is more imperiously demanded in winter than in summer. The relaxation of the tissue, and the perspiration produced by even slight exertion in the summer, obviate in a measure the necessity for frequent bathing, the removal of the perspiration being then a luxury as well as a necessity. In winter, however, perspiration is almost insensible, the cold contracts the skin and has a tendency to lock up the cutaneous excretions, and the want of facilities for bathing results in the retention within the body of effete substances that poison the blood and lower the vitality. There are few, however, so poor, and few houses so ill-constructed, that the whole surface of the body cannot at least once a week be entirely cleansed. But few have any idea of the fearful epidemics that have followed in the wake of uncleanly habits. There was a time in the early history of the church when dirt and doctrine were wedded to each other. There is a church tradition, though it is hoped there is no truth in it, that St. James never took a bath. A biographer of St. Anthony says that " up to an extreme age he never washed his feet." No wonder, and no compliment, that erysipelas—a filth disease—is called St. Anthony's Fire. A recent writer says " the fourth century was the religious apotheosis of dirt, not because the hermits and church had any quarrel with clean skins, but because of the *sensuous* delight (they must mortify flesh) and comfort of bathing in hot climates. Bathing was one of the luxuries renounced at baptism, and fulminated against by various bishops and councils as late as the fifteenth century." Let us note the results. Millions of the human family were carried off by the plague, black death, and other awful epidemics. Between 1333 and 1348, 45,000,000 of people were said to have been destroyed by the black death alone. Sanitary science, then, as now, a branch of medicine, came to the relief of the people. Its precepts and teachings regarding the dangers of filth and the blessings of cleanliness, were the blessed evangels of a better health, and it is safe to predict that such epidemics can never occur again. The most dreaded of all our epidemics of to-day, and one insignificant as compared with those referred to, cholera, can be practically annihilated by proper *sanitary* measures—especially a modification of the filthy practices of the pilgrims at Mecca and on the Ganges. The practical lesson then is, not simply to wash and be clean, all of which is very sensible, but wash and be " well."—*Monthly Bulletin Iowa State Board of Health.*

✣ ✣ ✣

American Infertility.—The report of the census of Massachusetts for the year 1885 has just been completed by the issue of a second volume, which contains statistics with regard to the number and occupation of native-born persons, the number and occupation of aliens, illiteracy, marriage, employment of children, prisoners and convicts, paupers, and many facts with regard to education. The total population of the State is 1,942,141. Rather less than a million and a half are native-born, rather more than half a million are foreign-born. Two-thirds of the men in the State are engaged in remunerative occupations, and rather over one-fifth of the women; this is a large increase in the number of women engaged in such occupations. The number of children at work had greatly decreased in the decade since 1875; the decrease for males was 74·14 per cent., and for females, 80·77 per cent. Moreover, more than half the children at work were also attending school. Not quite 8 per cent. of the population over 10 years of age were returned as illiterate; there were very few native-born illiterates (1·29 per cent.), the average being raised by the large number of foreign-born illiterates (21·50 per cent.). The total number of paupers was 8,394, of whom 6,004 had some physical defect. The number of blind persons (3,582) appears high, as does also the number of insane (5,623) and of idiots (1,638). The most curious point brought out in the article from which these figures are taken is the comparatively low fecundity of native-born mothers; 232,704 native-born mothers had 784,499 children, or an average of 3·37 children to each native-born mother, while 154,941 foreign-born mothers had 809,548 children, or an average of 5·22 children to each foreign-born mother. If this average were maintained, it would seem that the population of the State would increase at a very slow rate were it not for emigration. It may be noticed, however, that a much larger proportion of the foreign-born than of the native-born population are workers, so it may be that a larger proportion of foreign-born mothers are at the age of greatest fertility. A large proportion of the native-born mothers must, for the same reason, belong to the professional and wealthy classes, in which early marriages are not so often contracted as among the classes who work with their hands.—*British Medical Journal.*

✣ ✣ ✣

Overcrowding and Open Spaces.—The art of close building appears to be a progressive one. In its infancy twenty years ago, the art has now arrived at a stage nearly approaching perfection. Between then and now every step in an ascending scale of growth and development has its prototype, and is characterized in monuments discoverable in Lambeth. In the earlier examples, an examination of the ground-plan elicits the fact that the space allotted to garden-land is more comprehensive in area than that dedicated to the plumb-line and trowel. In the successive stages the size of the two quantities may be observed gradually to approximate, until, reaching an equality, they again diverge into unequal proportions, now, however, at the expense of uncovered ground, and this until the final stage of development is attained, when the extreme limit of encroachment permitted by the Building Act is reached, and garden-land is represented by a yard 100 superficial feet in area. . . . Let us here consider the effect upon the physique of the people which has been induced by the prevalent system of close building, whereby the space necessary for the healthy indulgence by the young in games has been sacrificed and the overcrowding which has been found to exist has been rendered possible. The unhealthy influence of close building falls especially upon the poor and wage-earning class. The children of the wealthy, and of those in easy circumstances of life, enjoy opportunities in regard to recreation unshared by the less fortunate. With them distance from the scene of daily employment is not the insuperable obstacle. Residence may be chosen in consideration of the requirements of the family, and country and seaside change supplies a common alternative to the monotony of town life. The Royal Commissioners, in their Report upon the Houses

of the Working Classes, speak of the effect which close building has upon health:—"In St. Luke's ophthalmia among the young is very prevalent, and can be traced to the dark, ill-ventilated, crowded rooms in which they live. Among adults, too, overcrowding causes a vast amount of suffering, which could be calculated by no bills of mortality, however accurate. Even statistics of actual disease consequent on overcrowding would not convey the whole truth as to the loss of health caused by it to the labouring classes. That overcrowding lowers the general standard, that the people get depressed and weary, is the testimony of those who are daily witnesses of the lives of the poor. The general deterioration in the health of the people is a worse feature of overcrowding even than the encouragement by it of infectious disease. It has the effect of reducing their stamina, and thus producing consumption and diseases arising from general debility of the system. Nothing stronger could be said in describing the effect of overcrowding than that it is even more destructive to general health than conducive to the spread of epidemic and contagious diseases." In the out-patient department of one of our large hospitals evidence has been collected upon the condition of the constitution of town-dwellers, and especially of those with a town-born ancestry. An eminent surgeon, Mr. Cantlie, has arrived at some startling conclusions. Among that section of the community from which the hospital out-patient is drawn, in the first generation he finds a distinctive divergence from the normal type, manifest by a reduction in height and weight, and a diminution in lung capacity; and in the second, symptoms of grave constitutional decay.—*Dr. H. W. Verdon, in Lambeth Health Report.*

✣ ✣ ✣

The Arrest of Consumption.—The Islington Medical Society met on March 26th to hear an address from Dr. Sansom on the Arrest of Phthisis and the way in which it occurs. Dr. Sansom was disposed to think that the bacillus of tubercle had a tendency to die out, like other germs, if it could be put into unfavourable circumstances. Analyzing about twenty cases in which, from careful personal observation, he was satisfied of the arrest of phthisis, he found that the most invariable condition to be noticed was that they had all had climatic change, not in any given place or climate, but somewhere out of the air of crowds and town. He attached more importance to this element in treatment than to any merely medicinal measures. Of these, cod liver oil was best, sometimes administered by the rectum when it was not acceptable to the stomach; and he recommended the inunction of carbolic acid over the apices in the form of an oil, one part of carbolic acid to four of olive oil. He did not find that preparations of iron had been used in these successful cases. One of the members directed attention to the remarkable exemption from phthisis of the Faroe islanders, who lived in a very open moist air, and fed largely on fish and wind-dried mutton. They had plenty of bronchitis and rheumatism, but no phthisis. The account of these islanders and their sanitary condition is to be found in the *British and Foreign Medico-Chirurgical Review*, vols. vii. and xi. It may be hoped that Dr. Sansom is a little too absolute in thinking change of air and climate essential to the occurrence of spontaneous cure or arrest of phthisis. It would be a bad look out for our poorer patients if the chance of cure depended on the, to them, entirely impracticable remedy of a change of climate. The fact seems to be that the tendency to tubercle seems to be much more common than is thought, as well as the tendency to get over it. Dr. Heberden, in his Commentaries, shows that he had knowledge of such processes, and gives one or two cases in point. Our best knowledge of the chances of the arrest of phthisis is based on observations in the pathological theatres of the great hospitals of large cities—Edinburgh, Paris, London, and Vienna. It was these that gave Hughes, Bennett, Williams, Rogée, Boudet, and others their first belief in such a process. We cannot do better than reproduce here the words of Dr. Bennett:—"The careful dissections of morbid anatomists have recently shown that this arrestment (of the further deposition of tubercle), instead of being a rare or occasional occurrence, really happens with extreme frequency. In 1845, I made a series of observations with reference to the cretaceous masses and puckerings so frequently observed at the apices of the lungs in persons advanced in life. The conclusion arrived at was that the spontaneous arrestment of tubercle in its early stage occurred in the proportion of from one-third to one-half of all the individuals who die after the age of forty. The observations of Rogée and Boudet, made at the Salpêtrière and Bicêtre Hospitals in Paris amongst individuals generally above the age of seventy, showed the proportion in such persons to be respectively one-half and four-fifths." The observations of Heitler in the post-mortem room of Vienna are to the same effect, and show a large proportion of spontaneous recoveries.—*Lancet.*

Sanitary Floors.—English people are, as a rule, indisposed to adopt any of the manners or customs of foreigners, and this is perhaps praiseworthy from a patriotic view; but when such manners or customs have the advantage over ours of being healthier, then there should be no hesitation in introducing them into this country. There is one continental custom that we should very much like to see become universal in Great Britain, and that is the general habit of stained floors. In France or Germany one very rarely sees the boards covered with carpets; but, instead, they are polished, with a rug or drugget in the centre. The advantages are numerous. In the first place, a stained floor can be cleaned more easily and effectually than when it is carpeted; in the latter case it is impossible, even with the most vigorous sweeping, to get rid of all the dust, but with the stained floor almost every particle of dust can be removed by wiping the boards with a damp cloth, and the rug or drugget can be taken up and beaten in the garden. The saving in labour is immense, and, to our view, a much more picturesque and artistic appearance is gained. An additional advantage lies in the fact of this continental custom being so economical. Carpets, as we all know, are expensive articles, and soon wear out; but stained floors cannot be condemned on that point, thanks to a new preparation, which has also reduced the three former laborious processes—viz., sizing, staining, and varnishing—into one. This valuable preparation has been brought out by Messrs. T. S. Jackson & Sons, 199, High-street, Boro,' London. It is called a Combination Varnish-Stain, and an ordinary deal floor may, by its use, be made to look like oak, mahogany, walnut, &c., with a splendidly polished surface. The operation of laying this varnish-stain on is so simple that the most inexperienced in the art of decorating can perform it satisfactorily. We have so high an opinion of this preparation that we hope it will be used by all who value health, economy, and beauty in their homes. It will cost but a few shillings to stain the floor, where pounds would be spent in carpets; and rooms where it is used can always be kept clean, healthy, and bright.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

SOCIAL WELFARE.

Subjects of Social Welfare. By the Right Hon. Sir Lyon Playfair, K.C.B., M.P., &c. (London: Cassell & Co., Limited. 1889).

As a rule, collected addresses and speeches, bound together and issued in volume form, are by no means lively reading, even if they may claim to be the work of a distinguished man. The want of continuity, and the fragmentary character of the matter included in such a volume are apt to discourage the reader. Still, there are exceptions to every rule, and the work before us, we are glad to say, forms one of the exceptional cases in which the speeches and addresses of a well-known statesman may be perused with profit and pleasure alike.

That Sir Lyon Playfair has had a very remarkable career, when all is said and done, is a bare statement of fact. From Professor of Chemistry in the University of Edinburgh to Postmaster-General was a wide step; but Sir Lyon Playfair's indomitable perseverance, which elevated him to the former office, may be credited likewise with having enabled him to attain to a by no means insignificant position in the political life of our day. He is a many-sided man, and the book before us demonstrates this fact. He is, besides, one of the few scientifically-trained Parliamentary hands, of whom it would be well for the land if a greater number could sit in the House. Men accustomed to deal with questions of public health, of education, and of sociology at large are all too few in number in Parliament. It is to Sir Lyon Playfair's credit that whatever his political aspirations and tendencies may have been, he has ever been willing, ready, and able to support with energetic voice all movements having for their aim the social elevation and progress of the people.

The addresses in this volume are divided into three sets or series. The first part, entitled "Public Health," includes essays on "Public Health," "Sleep," "Vaccination," "Vivisection," and "The Disposal of the Dead." The essay on sleep is a lecture delivered as long ago as 1846, but its views and opinions have not been materially affected by recent investigations. The vaccination and vivisection articles consist of the speeches delivered by Sir Lyon Playfair on these topics in the House of Commons. It is needless to say they both smack strongly of trustworthy science and sound common sense alike. They will supply irrefutable argument against the anti-vaccinators and anti-vivisectionists; and in this light may be commended to the careful perusal of the public. Cremation has a good word said for it in the closing article of the first part of this volume. "As at present practised," says our author, "the grave cannot be looked upon with the eye of knowledge except as an evil to the living and a dishonour to the dead."

The second and third sections of the book deal with sociological matters, and are entitled "Industrial Wealth" and "National Education" respectively. Included in the first of these sections we find Sir Lyon Playfair's address in 1885 to the British Association at Aberdeen; his address to the Birmingham Midland Institute in 1870; and various other speeches on "Fair Trade," "Protection and Wages," "Industrial Competition," and "Petroleum, the Light of the Poor." The educational section of the volume deals with "Technical Education," "Primary Education," "Teaching Universities and Examining Boards," and "Universities in their Relation to Professional Education." These educational essays form the most consistent and solid portion of the work, and they certainly contain much food for thought to all who are in any way interested in seeing the higher culture of the country fulfilling its destiny and aims. The whole book, as we have said, is an exception to the ordinary scrap-book style of literature commonly represented in volumes of collected essays. It will well repay perusal by old and young alike.

THE STATISTICS OF LIFE.

The Elements of Vital Statistics. By Arthur Newsholme, M.D. (London: Swan Sonnenschein & Co. 1889).

This volume, in our opinion, will supply a felt want, since it presents the student of hygiene and the medical officer of health with a handy reference book to the modes in which vital statistics are to be calculated and dealt with in relation to health-science. The department of hygiene which concerns itself with the compilation and arrangement of vital statistics is second to none in importance, but it is one, at the same time, which presents obvious difficulties to the student. These difficulties Dr. Newsholme strives, and we think successfully, to overcome. He shows clearly and fully the various points to be attended to in compiling statistics, indicates the common sources of error, and presents his reader with plain directions for calculation. We have been specially struck with the excellence of the author's remarks on "Life Tables," and on "Statistics of Sickness."

The work is one which is certain to be useful to all health-officers and students of hygiene; while actuaries and insurance office officials at large will find much in its pages to interest and instruct them.

Magazines of the Month.—*Harper's Magazine*, as usual, presents a bright and attractive appearance for May. The articles on "Social Life in Russia" and on "The Royal Academy" come very *apropos* at the present time. The number is both readable and entertaining. *Belgravia* contains a very fair instalment of completed stories, among which "The Manufacturer," by W. C. Stacpoole, will be read with interest; and the *Gentleman's Magazine* will prove attractive from Mr. Archibald Forbes' article on "A Forgotten Rebellion." Messrs. Cassell's serials, *The Countries of the World*, concludes its issue with the current part; their new *Popular Educator* and *Illustrated History of England* continue to prove of educative value. *Babyhood* is one of the best of the family magazines now issued; as a mother's guide it is both reliable and instructive in all its details. *The Housewife* presents us with a varied programme, ranging from health in the home to a somewhat silly department devoted to character-reading. Save for this latter feature, the magazine is to be commended to the notice of heads of households.

To remove the shiny look from black clothes, wash well, then dip a black cloth in hot tea and coffee, equal parts of each, and sponge the clothes.

IMPORTANT ANNOUNCEMENT.

BONUSES TO SUBSCRIBERS TO "HEALTH."

HEALTH, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Bookstalls, on the day of publication. It may also be ordered from the PUBLISHER, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain HEALTH from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we offer the following FREE GIFTS and BONUSES to all who subscribe to HEALTH for one year or longer :—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of HEALTH, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of HEALTH weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of HEALTH so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of HEALTH, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will also be presented to anyone who succeeds in obtaining three yearly subscribers to HEALTH, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with HEALTH should be addressed directly to the PUBLISHER, 2, Paternoster-square, London, E.C., and *not to the Editor*.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules :—

1. All questions are answered free of charge in the columns of HEALTH. A limited space only, is available for the insertion of replies each week.

"ELECTRICITY IS LIFE."
(TRADE MARK.)

PULVERMACHER'S

WORLD-FAMED

GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES,
HAVE RECEIVED TESTIMONIALS from
THREE PHYSICIANS to
HER MAJESTY the QUEEN,
THE ACADÉMIE DE MÉDECINE of Paris and
FORTY MEMBERS of the
ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* NERVOUS EXHAUSTION.
28, St. John-street, Newport Pagnell, April 29th, 1889.
Dear Sir,—I am pleased to say that to me your invention of the Galvanic Combined Bands is invaluable. Having worn them with so much benefit, I can bear testimony to their comfort and support.—Yours truly,
(Mrs.) A. F. COOCH.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* RHEUMATISM & NERVOUS DEBILITY.
Erin Manor, Burgess-hill, April 27th, 1889.
Dear Sirs,—I have great pleasure in informing you that the Galvanic Belt I got from you last January for my old gardener has been of the greatest benefit to him; he now sleeps well, his appetite is good, and he has greatly increased in flesh. Under God's blessing your Belt has been the means of restoring this poor man to health, and he is now able to resume his work, even to stooping and digging, neither of which he has been able to do for the last five years.—Yours faithfully,
W. R. E. ALEXANDER, Major-General.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* LIVER COMPLAINT, INDIGESTION, AND CONSTIPATION.
High-street, Woolwich, April 25th, 1889.
Gentlemen,—Some years ago I was suffering from liver complaint, indigestion, constipation, &c., till my life was almost a burden to me. I could get no relief until I purchased one of your Galvanic Belts, and after a short time I was completely cured, and, thank God, the cure was permanent, for I have never had the slightest return of my old complaint. I can safely recommend your treatment to anyone suffering from dyspepsia and weakness of the stomach.—Yours respectfully,
A. SIMMONS.
Messrs. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS DEBILITY.
3, Baltic-place, St. Luke's, E.C., 8th April, 1889.
Gentlemen,—In reply to your kind inquiries as to the efficacy of your Galvanic Bands, I am pleased to state that your treatment in my case has been entirely successful, and if I may judge by my feelings at the present time it is a permanent cure.—Yours truly,
S. WILTSHIRE.
Messrs. Pulvermacher & Co., 194, Regent-street.

GALVANISM *v.* MUSCULAR WEAKNESS.
Builth Wells, Wales, 7th April, 1889.
Gentlemen,—You will be pleased to hear that your appliances have worked wonders for me in my general health. I am as strong as a horse, and am constantly being reminded by my friends of my improved appearance and increased size, having gained so much in flesh and muscle.—Yours faithfully,
W. SKINNER.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS PROSTRATION.
Syston, near Leicester, 3rd April, 1889.
Gentlemen,—I thank you for your kind inquiry as to my health, and I am pleased to tell you that, under the blessing of God, your treatment has been of great value to me, for I am now able to attend to my business again, which was almost impossible before I began to use your Galvanic Bands. —Yours faithfully,
J. SHEFFIELD.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* RHEUMATISM OF THIRTY YEARS' STANDING.
Quarry Calne, Wilts, March 29th, 1889.
Dear Sir,—Some years ago my husband purchased one of your Galvanic Belts for chronic rheumatism, which quite cured him. The case was a most severe one of thirty years' standing, and my husband was almost a cripple, and could not lift his hands to his head. Before he got your Belt he could not rest day or night, but now he is quite cured, and is never troubled with the rheumatism in the least.—Yours very truly,
(Mrs.) S. WESTON.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM : NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to

J. L. PULVERMACHER AND CO.,
GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W.
(ESTABLISHED OVER FORTY YEARS.)

2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

ANXIOUS STUDENT.—You need not alarm yourself. You suffer simply from nervous exhaustion, the result of too intense application to study. Limit your brain-work, and take plenty of fresh-air exercise. Take as a tonic Inman's Syrup of the Hypophosphites (advertised in our pages), a teaspoonful in a wineglass of water after your meals, thrice daily.

EDINBURGH.—[You give no *nom de plume*, so we adopt the name of your city as the only reference to your case].—You must look well to your diet. Rest strictly after your meals, and avoid excess of vegetable foods; and for the rest adopt the diet-hints and the advice as to use of Cascara noted to "Juno" in HEALTH, No. 316. Give up tea and coffee, and substitute Scott's Midlothian Oat Flour therefor. Write again, if not bettered.

E. W. SALTERLEE.—We are glad to hear our advice has benefited you. You do not need to continue the Cascara if your digestive action has been established in a natural fashion. Trust to diet to make permanent the effects of the medicine. Take plenty of stewed fruits and vegetables, and use Grant's Oat Flour in place of tea and coffee, while Dahl's Cakes should also be taken regularly by you as a food and medicine combined.

KOM.—Adopt advice given to "Sorter" in HEALTH for last week; and if not cured, write again. You should try a Chloride of Ammonium Inhaler (Burroughs, Wellcome & Co.'s) for the relief of your chest-troubles.

E. C. R.—We advise you to write to Mr. Pulvermacher (194, Regent-street, London, W.), and give a full account of your case; he will advise you on the points named.

C. E.—Give the infant Mellin's Food only; that you are now using contains starch.

J. JONES.—Read the pamphlet recommended to "A. Watson" in the present number, and by following the rules it lays down you will recover your health. Your ailment is not so much of physical as of mental nature, and there is no need for you to worry.

E. M. G. S.—1. We do not know the appliance you name, but Mr. Harness, 52, Oxford-street, London, W., will be able to answer your questions. Write to him direct. 2. No; the disease you mean is cystitis.

B. ALFORD.—You should give up the drug you are using. It was not intended by your late doctor that you should take it daily, and you are simply making yourself worse by drugging yourself as you do. Give up all medicines, live plainly, renounce alcohol, and drink Vichy Water regularly.

HOPEFUL W.—Take your bath tepid, by all means, if you feel the cold water too much for your reaction. You are simply brooding over your fancied ailments, and making an illness out of your mind. There is no cure for such a case as yours, so long as you brood over imaginary troubles. Cease to think about yourself, join a gymnastic class, or try cycling, and your physical exercises will speedily abolish the symptoms you complain of.

MARTIN SMITH.—You suffer from a form of acne or blackheads. Read the article in HEALTH, No. 199, on that subject, and follow out the treatment there directed. Avoid fatty foods, and take warm baths.

TARDY.—See advice given to "Captain Swift" in the present number.

J. P. SELKIRK.—Try the following:—Powdered rhubarb and powdered calumba, of each, ten grains; aromatic powder, five grains. Mix: and take one such powder at bedtime. Your food must be light for a time. Avoid much flesh-meat.

EDNA.—Take at bedtime a Dover's Powder (ten grains) and a hot bath. You must clothe warmly and avoid chills. Use Forsyth's Woollen Clothing, 16, Renfield-street, Glasgow.

F. T.—You mean borax itself, not the acid. The following may suit your case:—Carbonate of magnesia, five grains; powdered white sugar, five grains; powdered borax, four grains. Mix to form a powder. One powder to be taken twice daily, an hour after meals, for acidity.

JANE S.—We recommend you to try Blaud's Pills. Take them after food, one pill twice daily at first, and to be increased by one pill daily, until, say, six are taken each day in your case. Note the effect of these. Any druggist will supply the pills.

SERIEUX.—Many physicians do not approve of colchicum, but its good effects, in our opinion, are undoubted. Give it as follows:—Tincture of colchicum, a drachm and a half; carbonate of magnesia, two drachms; water, to make up six ounces. A tablespoonful to be given every three hours.

E. SEFTON.—"Eau de Luce" is a favourite Continental remedy for insect-bites, &c., and consists of soap-spirit, spirits of wine, liquor of ammonia, and a balsam.

CAPTAIN SWIFT.—Pruritus is a most troublesome affection to heal. In your case, consult a physician first of all, and see there is no kidney trouble. Wash with Vinolia Soap, and apply Vinolia itself thereafter, as an external remedy. Try the Pitkeathly Water with Lithia, advertised in our pages.

MILK IN POWDER!

UNSWEETENED OR SWEETENED.

PREPARED BY

THE SWISS MILK CO.,

ST. GALL, SWITZERLAND.

THE CHEAPEST, PUREST, AND MOST NUTRITIOUS

Of ALL similar productions.

THE LANCET says:—"A very interesting and valuable preparation."

BRITISH MEDICAL says:—"The Preparation is sure to be appreciated."

THE MEDICAL PRESS says:—"A milk which is with difficulty distinguished from fresh cow's milk."

HEALTH says:—"A milk which cannot but commend itself to everyone who can enjoy pure, rich milk."

LONDON OFFICE: 61, MARK-LANE, E.C.

Telegraphic Address—"LAWINSKI, LONDON."

George Rae.—Use a soft brush only, and avoid all hard and small combs. Wash the head once a week with Bayley's Soap and tepid water, and rub into the scalp thereafter a little glycerine of borax, as a remedy for scurf. Keep the hair short. Each morning rub into the roots of the hair with a small piece of sponge a little of the following lotion:—Vinegar of cantharides, half an ounce; eau de Cologne, one ounce; rose water, one ounce. Mix.

Pesta.—Try the following mixture:—Bicarbonate of soda, two drachms; dilute hydrocyanic acid, twelve minims; compound infusion of gentian, to eight ounces. Mix. Take a tablespoonful twice daily, an hour before meals.

Rialto.—You should take the following mixture for a week or so at a time, and then allow an interval of a week before resuming. This treatment to be carried out for some months at least:—Iodide of potass, two drachms; infusion of calumba, six ounces. A dessertspoonful to be taken thrice daily. The mouth may be gargled with chlorate of potash (or a chlorate of potash tabloid—Burroughs, Wellcome & Co.'s—be allowed to dissolve in the mouth) when symptoms appear there.

David Seal.—A very convenient way of taking Cascara is in the form of the preparations made by Burroughs, Wellcome & Co., Snow-hill-buildings, London, E.C., to be had of any good chemist.

Merv.—Lamplough's Pyretic Saline is certainly the best of the saline aperients you can take. Neither this, nor any other aperient, however, is meant to be taken continually, as you appear to suppose.

A Tonic

Horsford's Acid Phosphate.

A most excellent and agreeable tonic and appetizer. It nourishes and invigorates the tired brain and body, imparts renewed energy and vitality, and enlivens the functions.

Dr. James Black, L.R.C.S., Primrose-hill, Cockburnspath, Scotland, says:—"As a nerve tonic, I know nothing like it. It gives me great satisfaction."

Dr. Thomas Davidson, L.R.C.P. & S., Gosforth, Newcastle-on-Tyne, says:—"I find it an excellent tonic in cases of mental anxiety induced by over-study in clergymen and others."

Descriptive Pamphlet post free on application to

Rumford Chemical Works,
Providence, R.I., U.S.A.

Beware of Substitutes and Imitations.

Cutaneous.—Try the following ointment, which in psoriasis has been used with good effect: — Chrysophanic acid, one drachm; lard, one ounce. Mix. Label, "A small piece, about the size of a pea, to be rubbed into each patch of the disease daily." In some cases in which the ointment has been applied to one side of the body only, the other extremities being wrapped in wool, the disease was wholly cured.

Hospes.—To make a mustard fomentation, the effects of which may often be greatly increased by the addition of a little mustard to the water, note the following directions:—A tablespoonful of good ground mustard to the quart of hot water is a sufficient quantity. The mustard should be allowed to infuse for ten or fifteen minutes, so that the essential oil will be extracted by the water. When large fomentations are applied, it is economy to employ the following method: Instead of adding the mustard to the whole quantity of water used, prepare only a pint or a quart of mustard water. Wet a single thickness of flannel in the mustard water. Lay it over the part to which the application is to be made, and then apply over it a hot fomentation prepared in the usual way.

A. Sinclair.—Freckles may be removed by the following lotion:—Sulpho-carbolate of lime, two ounces; glycerine and rose-water, of each, twenty-five ounces; alcohol, five ounces. Mix. Wash the skin twice in twenty-four hours, letting it remain damp with the lotion for half an hour.

Pressman. — The indexes to all the volumes of Health can be procured on application to the Publisher, 2, Paternoster-square, London, E.C.

C. A.—Take plenty of rest, and, as a tonic, try a teaspoonful of Inman's Syrup of the Hypophosphites in water, twice daily, after your food.

A. Watson.—Do not waste your money on quacks. The firm you name is a quack one. Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., 5th Edition, from Mr. Renshaw, 356, Strand, London, W.C.). You will learn from its pages full directions for your restoration to health. The probability is you are quite well and need no remedies, save attention to diet, &c., such as the pamphlet directs.

Nemo.—You will not find any English medical man of any standing to use mesmerism in the treatment of disease. In France, Charcot and others have used hypnotism in the treatment of nervous disorders, but without marked success, as far as we have ever heard. Besides, the action of hypnotism is at best very uncertain; and there are other considerations which render your proposal or idea untenable and unsafe. We should, indeed, advise you to distrust any person who professed to use mesmerism at all as a remedy for disease. Read the articles at present appearing in Health on "The Shady Side of Brain Work."

Certain **HARNESS'** Cure.

ELECTROPATHIC BELT

FOR

SLEEPLESSNESS

SLEEPLESSNESS.—The Rt. Hon. Lord Byron says that—"*Harness' Electropathic Belt is invaluable for sleeplessness, I recommend it to all my friends.*"

Guaranteed to generate a mild continuous current of Electricity, which speedily cures all Disorders of the Nerves, Stomach, Liver and Kidneys. Thousands of Testimonials. **Pamphlet & Advice free on application** to **Mr. C. B. Harness,** *Consulting Electrician,* the **Medical Battery Co. Ltd.**

Only Address,

52, OXFORD ST., LONDON, W. (*Corner of Rathbone Place.*)

Call to-day, if possible, or write at once

Charles Gordon.—See advice given to "A. Watson" above. Do you expect that such symptoms as you describe are unnatural?

Nasal Catarrh.—Read the article on "Nasal Catarrh" in Health, No. 311, and use a Burroughs' Chloride of Ammonium Inhaler. This, with a residence by the sea (say at Ventnor) for a month, and the occasional use of a tonic such as Inman's Syrup of the Hypophosphites (a teaspoonful in a wineglass of water, thrice daily, after meals), should cure you. Change of air is a most potent remedy in ordinary cases.

H. C.—1. Apply every night a little cold cream to the eyelashes. 2. We should not think the powder could have any effect in causing the hair to fall off; but any powder which passes into the air in any quantity and is breathed into the lungs, is apt to prove injurious to health in time.

A Lover of Health.—1. Follow advice given to "Wharton Liddall" in last week's Health. 2. What you name is natural to many persons. Bathe the parts with cold water each morning and evening, and wear suspensory bandage.

Electric.—If you mean the quacks of that name in Sheffield, we warn you against them. You are only throwing money away. Read the pamphlet, "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and you will find full directions for treatment therein.

J. B. — Your question would occupy several pages of Health were we to answer it fully. You will find illustrated articles on the parasites you name, in Health, Nos. 174, 185, and 190. These numbers can be had of the Publisher, price 2½d. each, post free. There are also the round and thread worms, which inhabit the human intestine. If you wish for information regarding the treatment for any specific worm, write again.

Unhealthy.—1. If you cured your constipation by the treatment recommended to "Wharton Liddall" in Health for last week, you will probably find your symptoms to be completely removed. If not, write again. 2. We cannot answer your question without knowing what kind of examination you mean.

Marah.—1. The tabloids you have procured are the correct ones. They are made by Burroughs, Wellcome & Co., of London. 2. For biliousness, avoid flesh, and give farinaceous foods and milk, diluted with soda, with a dose of Lamplough's Pyretic Saline in the morning. 3. In such a case as that you name, if stimulants are taken at all they should be limited to a little pure whisky well diluted with Pitkeathly Water (advertised in our pages); and such stimulants should only be taken with food. 4. For the sciatica, try a couple of five-grain Antipyrin Tabloids, given thrice daily at intervals of two hours or so.

B. T.—Continue the tonic you are taking for a few days. If you are not bettered then, cease taking it. What you complain of is only due to nervousness, and will pass away in time, so long as you do not overexert yourself. Take fresh-air exercise in moderation daily, and watch your digestion. Let your food be of plain quality, and avoid tea and coffee. See advice regarding diet, &c., given to "Sorter" in last week's number.

Price from £4 4s.

10% DISCOUNT FOR CASH.

On Hire 2/6 Per Week

WITH OPTION OF PURCHASE.

Instruction Free.

PRICE LISTS GRATIS.

CAUTION.—To avoid deception, buy no Machine unless it bears the Company's Trade Mark, "SINGER," upon the arm.

THE SINGER MANUFACTURING COMPY.,

39, FOSTER-LANE, LONDON, E.C.;

And 443 Branches throughout the United Kingdom.

ESTABLISHED 1825.

NEAVE'S FOOD FOR INFANTS, INVALIDS, AND THE AGED.

BEST AND CHEAPEST.

COCA LEAF

PREPARATIONS:

COCA TABLETS.

Containing Borax, to promote action on the Throat and the Vocal Cords. 2/6 per box.

COCA LOZENGES.

Without the Borax, for persons to whom its flavour would not be agreeable. 2/6 per Box.

COCA ELIXIR.

For making COCA Wine, the dose being 15 to 20 drops to the wineglass; can be taken in any fluid. 3/- per Bottle.

COCA TEA.

COCA, in combination with selected Teas; tonic, invigorating, and delicious. 4/- per lb.

These preparations may be obtained of all Chemists and Grocers. An Explanatory and Historical Pamphlet, showing the uses of the COCA LEAF, sent on application to the Sole Proprietors—

THE FRENCH HYGIENIC SOCIETY OF LONDON, 6, Conduit-street, Regent-st., W.

THE FIFTH EDITION NOW READY.

A

LECTURE TO YOUNG MEN

ON

"Purity of Life and the Preservation of Health."

BY A GRADUATE.

A complete Refutation of Quackery and a safe and reliable Guide, from the Medical standpoint, to all Young Men. Every Youth should read this pamphlet as a guide to the safe conduct of life in a moral and physical sense.

PRICE ONE SHILLING, or post-free 1s. 1d., from

HENRY RENSHAW, MEDICAL PUBLISHER, 356, STRAND, LONDON, W.C.

SEVENTEEN GOLD, SILVER, & BRONZE MEDALS.

WM. WOOLLAMS & CO.,

ORIGINAL MAKERS OF GUARANTEED

NON-ARSENICAL

WALL PAPERS.

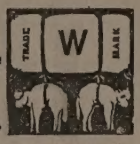
TO BE OBTAINED OF ALL DECORATORS.

Manufactory and Sole Address:

110, HIGH STREET

(Near Manchester-square),

LONDON, W.



NOTE TRADE MARK.

Demy 8vo, with One Plate, price 1s.

BOARD SCHOOL LARYNGITIS.

BY

GREVILLE MACDONALD, M.D. LOND.,

Physician to the Throat Hospital, Golden-square, W.

LONDON:

A. P. WATT, 2, PATERNOSTER-SQUARE.

In FLUID, POWDER, & SOAP.
Most Powerful, Lasting, and Non-Corrosive.
Complete.

QUIBELL'S INFALLIBLE DISINFECTANTS.

Non-Poisonous.
Cheap and Effectual.
NEWARK, ENG.

ONE BOX

OF

CLARKE'S B41 PILLS

IS WARRANTED TO CURE

All ailments of the Urinary Organs (acquired or constitutional), Gravel, and Pains in the Back.

GUARANTEED FREE FROM MERCURY.

Sold in Boxes, 4s. 6d each, by all Chemists and Patent Medicine Vendors throughout the World; or sent to any address for sixty stamps by the Makers,

THE LINCOLN AND MIDLAND COUNTIES DRUG COMPANY, LINCOLN.

Wholesale Agents: BARCLAY & SONS, London, and all the Wholesale Houses.

Order "HEALTH" from your Newsagent.

TERMS OF SUBSCRIPTION.

Yearly, including home postage, postage to the Continent, Canada, or the United States, 10s. 10d.; Six Months, 5s. 5d.; Three Months, 2s. 8½d.

Cheques and Post Office Orders to be made payable to the Publisher A. P. WATT.

A Wonderful Medicine.

BEECHAM'S PILLS.

WORTH A GUINEA A BOX.

BEECHAM'S PATENT PILLS. ST. HELENS LANCASHIRE

FROM the earliest days of medicinal science, no antidote has achieved such a reputation as Beecham's Pills. Their fame has reached the uttermost parts of the earth, their curative power is universally acknowledged to a degree unprecedented in the annals of physical research; they stand forth pre-eminent to the world for their health-restoring and life-giving properties, being the most marvellous medicine yet discovered for Bilious and Nervous Disorders, Sick Headache, Indigestion, and all Derangements of the Liver; and for Suffering Females are—

"A priceless boon, a treasure more than wealth;
The banisher of pain, the key to health."

BEECHAM'S PILLS have the largest sale of any Patent Medicine in the world.

Printed for the Proprietor by Henderson, Rait, & Spalding, at 3 and 5, Marylebone-lane, Oxford-street, in the Parish of Marylebone, in the County of Middlesex, and Published by Alexander P. Watt, at No. 2, Paternoster-square, London, E.C.